

A CASE STUDY OF THREE TEACHERS IN THE KENTUCKY
TELECOMMUNICATIONS WRITING PROJECT

BY

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A DISSERTATION PROPOSAL PRESENTED TO THE GRADUATE SCHOOL
OF THE UNIVERSITY OF FLORIDA IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

UNIVERSITY OF FLORIDA

1997

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ACKNOWLEDGMENTS

This dissertation has been a five-year collaboration crafted and supported by many people, none of whom accept simple solutions for complex problems. In times of educational reform and accountability, times when the hard work lands squarely on the back of classroom teachers, the Bingham Trust signified trust in teachers by generously funding the Kentucky Telecommunications Writing Project (KTWP). I thank the Bingham for the boldness of their support.

I acknowledge my gratitude to Carol Stumbo, Bud Reynolds, and Robin Lambert in Kentucky; Chris Edgar and Nancy Shapiro from Teachers & Writers Collaborative in New York City; Eliot Wigginton for his belief that teachers and students can and must work together; and Dixie Goswami who said, “When the communication is working, the technology is invisible.” All of these people contributed ideas, time, and faith as they nurtured the KTWP throughout the three years of its existence.

My deep appreciation goes to all the teachers and students who participated in the KTWP, especially Emmy Krempasky, Beverly Paeth, and Sue McCulloch-Vislisl. These professional teachers worked endlessly and enthusiastically, believing in their students and themselves. At times the work was painful, but none of them gave up, and all of us are richer for their contribution. They participated in endless discussions and interviews; I appreciate most their willingness to speak thoughtfully and honestly.

Words can not express the gratitude I feel toward Dr. Linda Leonard Lamme. As my primary mentor at the University of Florida, as well as my friend, she invited me into the professional conversation, welcoming my collaboration on many projects exploring literacy, integration, and equity. She was the first faculty member to believe in my ability and to show an interest in telecommunications. She herself dared to venture, from the familiarity of her own classroom, into cyberspace as she integrated electronic networking into children's literature and language arts' course work. She is fearless and kind, enthusiastic and intelligent. Without her unfailing belief in the power of literacy to change lives, none of my work would have happened.

In addition, I was extremely fortunate to work with an exemplary doctoral committee, a veritable goldmine of expertise. Their collective wisdom guided my research skills and their individual kindness fostered more fundamental beliefs. Dr. Roy Bolduc graciously deferred retirement to serve on my committee. His teaching demonstrated the value of a technology-intensive and discussion-rich environment, and it was in his seminar on curriculum theory and technology that I began to develop a conceptual framework for visualizing the power of electronic communication.

Dr. Dorene Ross led me to construct personal theories of reflective practice grounded in research. Consistently, her focus on teacher learning and teacher education has focused my thinking, helping me clarify themes and issues. She modeled logic and rigor, and she has challenged me intellectually throughout the five years of my doctoral studies. She continues to ask the important questions and she knows how to listen. Not only is she a true visionary with clear aims, but she is an expert practitioner as well.

Dr. Robert Sherman guided my growth as a qualitative researcher. His gentle ways and sharp mind taught me how to observe more closely, how to appreciate quality. I have, indeed, come to appreciate greatly his own eye for detail and the essence of his nature. His philosophical perspective helped me meet obstacles with equanimity, and from him I learned how to use many different tools appropriate to the task.

Dr. Jane Townsend nudged me to make my wonderings visible. Conversations with her inspired and guided me, helping me formulate questions. Her own research served as a model for mine, demonstrating the art and quality possible in educational research and providing me with organizational strategies. I admire her wit and wisdom, her tenacity. She is a creative genius, and she remains a critical friend.

On a personal note, I owe my deepest thanks to family and friends whose belief in me has helped me to believe in myself. Ruth and Kelvin Nelson, my loving and devoted parents, have always been there when needed. Joe Wood, my friend “for fifty years,” inspired and encouraged me from the beginning. The women of Gainesville, an entire community, served as my dissertation support group and raised me throughout. Beyond reason, Dr. Marnie Gibson Lamm provided the love that has made all the difference.

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Abstract of Dissertation Presented to the Graduate School
of the University of Florida in Partial Fulfillment of the
Requirements for the Degree of Doctor of Philosophy

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By

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May 1997

Chair: Dr. Linda Lamme

Major Department: Instruction & Curriculum

Teacher networking is a critical feature of school reform. This case study, conducted over a three-year period, explored the impact of telecommunications networking on the professional development of teachers. Special funding enabled teachers, with no prior expertise but required by educational mandates to integrate technology and writing, to form a private electronic network connecting their students and themselves.

Methods used to describe the teachers-only discussion and planning area of the larger network and to analyze the nature of teacher learning over the duration of the project were interpretive. Data included field notes compiled from the online discourse, tape recordings and transcriptions of interviews, artifacts from the project, informal surveys, and participant observation notes taken during three planning meetings.

The analysis of three years of online discourse-- over a thousand notes in which teachers talked freely about their personal and professional lives-- described the network as an egalitarian discourse community whose main function, mutual support, resulted in significant teacher learning. During the first year participants mastered the technology and created shared-space. In the second year they focused far more on curriculum content and innovation. The final year they wrote for publication and presented at state and national conferences.

A closer look at the individual participation of three of the teachers revealed three areas of teacher learning: writing, technology, and professional development. Results indicate that teachers varied in their commitment to the network and their learning from participation. Although all three involved their students and participated consistently throughout the duration of the project, they developed three different patterns of use, purposes for use, and functions of use. The study confirms Smylie's (1995) seven factors that work as facilitators or barriers to teacher participation and learning, and it suggests that the most critical factor was related to the personal goals of the teacher.

CHAPTER 1 INTRODUCTION

L. J. Perelman's (1992) prediction that "the classroom and teacher have as much place in tomorrow's learning enterprise as the horse and buggy have in modern transportation" (p. 19) challenges traditional educational practice. Technological advances are transforming the world in general and schools in particular as virtually every school in the United States now has microcomputers. Suddenly telecommunications is the link connecting education to the world, and, due in part to the role of technology as both a teaching and a learning tool, education has ceased to be defined as the mere transfer of information, a one-way passivity, but is seen instead as a more dynamic transaction where both the teacher and the learner are changed. Educational systems are being restructured, changing the teacher's role in the teaching and learning process as a result (Ely & Minor, 1992; Means, 1994; Molenda, 1992).

In January of 1994, Vice-President Albert Gore took the first steps toward opening the "superhighways" of information networks to the students of the United States when he and one of the country's largest telephone companies, Bell Atlantic, agreed to provide free access to schools. Soon this vast network and technology will be a classroom commonplace (Beckner & Barker, 1994). As Howard Rheingold (1993) writes, "Something big is afoot, and the final shape has not been determined" (p. 11). But

curriculum decision-making, how to best implement this technology, remains a great unknown. Such rapid innovation makes irrelevant today what was done only yesterday and presents us with pressing needs: "the necessity of properly preparing teachers as decision makers, the importance of planning and fully implementing pilot projects, and the need to keep up-to-date with the technology" (Hebenstreit et al., 1992, p. 67).

Increasingly, technology itself has come to be viewed as a catalyst for reform, the "revolutionary force that instigates and supports reform by teachers and administrators at the school level" (Glennan & Melmed, 1996, p. xiv). In Kentucky, a state undergoing comprehensive restructuring of the entire educational system, technology has been integrated into every aspect of educational reform (Phillipo, 1991). The 1990 Kentucky Educational Reform Act (KERA) mandated that Kentucky schools be transformed, and three assumptions served as the basis for broad-sweeping change statewide:

1. All children can learn and at relatively high levels.
2. Technology exists to support learning.
3. What children learn should be approximately the same across the state. How, by whom, and when, they learn changes to meet individual differences.

Policy makers operated under the assumption that "technology without [educational] reform is of little value, and that widespread reform without technology is probably impossible" (Glennan & Melmed, 1996, p. xx). Nationwide, educational reform efforts recognize that "technology is not only a catalyst and a tool for change, it is also an essential element of a school's infrastructure" (Phillipo, 1991, p. 3). In Kentucky, teachers, "cast as the chief facilitators of reform" (Boysen, 1992, p. 2), have been

required by law to implement technology and other innovations into their classrooms, but staff development, training teachers and schools to integrate technology, remains a problem.

In a typical scenario, computers are distributed (or not), explained (or not), and expected to be used (or not). Traditionally, teachers have increasingly become "deskilled" (Apple, 1986; Frymier, 1987; Gitlin, 1983; Goodman, 1988; Shannon, 1987). Deskilling has been most common in educational systems where teachers are handed ready-made curriculum, materials, schedules, and so on, and are expected to function efficiently. This model has not worked with efforts to integrate technology: "Simply providing hardware to a school will not change the teacher's daily practice: even 'user friendly' computers are not easy to use for a newcomer Teacher training is the only way to overcome these difficulties and is therefore an absolute prerequisite to the introduction of information technology in schools" (Hebenstreit et al., 1992, pp. 26-27).

Research in teacher training and staff development demonstrates that "traditional" modes are not effective (Guskey, 1986). According to a recent study by the Critical Technologies Institute, prepared for the United States Department of Education, "Past research strongly suggests that teachers must acquire new skills needed to operate technology-rich environments" and "current professional development policies do not encourage teachers to acquire such skills" (Glennan & Melmed, 1996, p. xviii). Most attempts to meet the needs of classroom teachers have failed, often because the efforts were imposed from some vision of technology other than that of a classroom teacher (Cuban, 1986).

Thomas Boysen, Kentucky's Commissioner of Education, defines a "self-renewing" teacher as one who accepts the challenge to "relearn." To do that, teachers must see themselves as learners, charting their own professional growth in order to achieve the desired goals and outcomes mandated by educational reform (Matthews, 1992). Calderhead calls for professional development to be a "long-term aim referring to communities of teachers working together, rather than a short-term aim for individual teachers" (p. 145).

Teacher networking has become a critical feature of school reform: since traditional staff development is inadequate especially where restructuring is happening-- new models, studies of "exemplars of professional discourse communities" (Grimmett & Neufeld, 1994), are needed. The U. S. Department of Education, the Office of Science and Technology Policy, and others have called for researchers to gather data and assess "effective applications of technology to the training and professional development of teachers" (Glennan & Melmed, 1996, p. xxii). Telecommunications, a recent technological innovation, provides a vehicle for teacher learning, creating the opportunity for that "continuous, life-long process of professional development" that fosters good teaching (Calderhead, 1992, p. 146).

Statement of the Problem

This study explored the nature and impact of the participation of three Kentucky teachers on a small electronic network over a three-year period, a period of massive educational reform. Teachers with no prior knowledge or expertise were required by

educational reform and state law to integrate technology and writing into their teaching. Private funding enabled them to form an electronic network, creating an opportunity for professional dialogue with other teachers in the state. What shape did their network take? How did they participate in the online discourse? How did they interpret their participation? What, if anything, did they learn from the experience? What factors fostered or inhibited their learning?

At issue is the question of how teachers may "change their beliefs and understandings as the result of conversational interactions, and how change interacts with their goals, which may include (any or all): achieving some practical task (a private and external goal), achieving agreement (a social and mutual goal), and achieving a better understanding" (Draper, 1995, p. 223). Also at issue are questions about professional development and the suitability of telecommunication networking as an effective learning environment for teachers.

Research Questions

The purpose of this study was to examine the teacher-only discussion and planning area of one telecommunications network, analyzing the participation of three teachers over a three-year period and comparing their interpretations of the experience to determine the impact of telecommunications networking. The research focused on the following questions:

1. What is the nature of the teachers-only discussion in the Kentucky Telecommunications Writing Project?

2. What is the nature of the individual participation of three teachers in the Kentucky Telecommunications Writing Project?
3. What is the nature of their learning?
4. What factors fostered teacher learning and what factors constrained it?

Because qualitative research attends to participants' perspectives and understandings (Bogdan & Biklen, 1982), and because this was an examination of one setting, this is a case study utilizing ethnographic methods to explore "the nature of the lived experience" (Van Manen, 1990). Case study research is "focused on discovery, insight, and understanding from the perspectives of those being studied" and is qualitative and "hypothesis-generating" (Merriam, 1988, p. 3), arising from "the desire to understand complex social phenomena" (Yin, 1994, p. 3).

Significance of the Study

Telecommunications enables learning to occur collaboratively across both time and distance (Davies, 1995; Hebenstreit et al., 1992). It supports teachers as they move from being providers of information to facilitators, reduces professional isolation, enhances teacher development and productivity, promotes idea exchange among educators, and contributes to innovations in curriculum design not possible in a traditional classroom (Tinker & Kapisovsky, 1991). In addition to considering recent developments in technology and education, current trends in teacher education, and studies of teacher learning over the long term, this research project extends what is now known about online discourse communities. Professional development-- helping practicing teachers make the

kinds of shifts required by reform and technology-- can be informed from such a project's story. This study has the potential to offer one model of teachers working together through telecommunications on common problems of instruction, designing staff development over extended periods of time, and exemplifying the very standards schools are setting for students.

To situate this three-year study of teacher discussion on a telecommunications network, in the second chapter of this dissertation, I document three areas of research: theories and practice in the teaching of writing, general trends in professional development for teachers, and research about telecommunications networks. In the third chapter, I explain my research methodology and the design of the study. In the fourth, fifth, and sixth chapters, I present analysis of the data, and in the final chapter I summarize and discuss the results.

For the purpose of this study, the following terms have these meanings:

1. "Telecommunications" is an overarching term that describes electronic point-to-point connections between individuals and groups. Telecommunications technology includes connections that utilize existing telephone lines, dedicated lines, and cable and satellite transmission. The trend within telecommunications is networking, connecting individuals who have common interests. Some use commercial information utilities, such as *America Online* and *Prodigy*. Others are part of education networks such as *AT&T Learning Network* and the *National Geographic Society Kids Network*. Bulletin board systems, such as *FrEdMail* and *FIDOnet*, offer message-sending and receiving capabilities at little or no cost for participation. Access to local freenets and the World

Wide Web make telecommunicating possible for most citizens. State networks in Florida (*FIRN*), Kentucky (*KetNet*), New York (*NYSernet*), Texas (*TENET*), and elsewhere are further indicators of the rapid spread of telecommunications networking within education (Barron & Orwig, 1993; Jordan, 1993; Roberts, Blakeslee, Brown, & Lenk, 1990; Weir, 1992).

2. "Dedicated lines" are phone lines used expressly for telecomputing.
3. "Download" is the term used to explain the process of transmitting or *receiving* a file, and "upload" is used to explain the process of transmitting or *sending* a file from one computer to another.
4. An "electronic network" allows groups of individuals to send and receive messages by computer. All messages are stored until the individual group members opt to read, respond, delete, or save them.
5. A "laptop" is a small, lightweight computer with a flip-up screen that can be powered by batteries and is easily portable.
6. Network participants "log on," or sign on, to the network by entering a username and a password. Networks are closed to the public. The server, or host computer, charges a fee for participation. As a result, memberships are monitored and online time is billed.
7. A "modem" is a communication device that converts electrical signals from a computer into an audio form that can be transmitted over regular phone lines.
8. "PC's," personal computers, are designed for use either at home or at school.
9. To "post" online is to send or upload written notes for others to read. Posting has the connotation of being a public, "published," message as opposed to more private mail.

CHAPTER 2 REVIEW OF RELATED LITERATURE

Teachers and students both participated in the Kentucky Telecommunications Writing Project. It was a project designed to impact the teaching of writing. Although students were the most active participants, writing to each other for a variety of purposes, their teachers wrote too. This particular study is limited to the teachers-only discussion area, the place where the teachers wrote and planned together.

What does an electronic discourse community created by a small group of teachers look like? How do the different members participate over the long-term? In what ways does a computer network foster teacher learning? What factors promote or inhibit it? Because the technological innovations inherent in an electronic discourse community are so recent, because it is uncommon to find longitudinal studies conducted in teacher development, and because studies of teacher learning situated on a computer network are rare, this study offers a substantive challenge to the fledgling researcher.

Although my study has not been done before I was able to examine the intersection of literature from a variety of research areas to support and inform my thinking. This three-year study of teacher discussion on a telecommunications network is framed then by theories from several domains. In this chapter of my dissertation, I review three areas of the research: theories and practice in the teaching of writing,

general trends in professional development for teachers of writing, and research about telecommunications networks for teacher learning, all interrelated. Clearly, my study has the potential to extend current research, especially in the areas of professional development and telecommunications technology.

Teaching Writing

According to James Britton (1972), we “learn to write above all by writing,” and the teaching of writing is grounded in theories of language and how language works (Sapir, 1961; Vygotsky, 1978; Wells, 1986). Various theories use various terms to differentiate communicative purposes. For example, Kinneavy (1971) identifies four types of discourse: reference, expressive, persuasive, and literary, and the National Assessment of Educational Progress uses three: expressive (self-centered), expository (world-centered), and persuasive (reader-centered).

Fulkerson (1994) defines four philosophies of composition: expressive, mimetic, rhetorical, and formalist. He classifies major theorists according to these headings and explains the value of category: expressive emphasizes the writer, mimetic emphasizes correspondence with “reality,” rhetorical emphasizes the effect on the reader, and formalist emphasizes “traits internal to the work” (p. 4).

Berlin (1994) groups theories of writing into four camps and he traces the historical roots of each: the Neo-Aristotelians or Classicists, the Positivists or Current-Traditionalists, the Neo-Platonists or Expressionists, and the New Rhetoricians. Berlin argues that writing theories agree about the elements of the composition process: the

writer, reality, reader, and language, but that they disagree in terms of which element to emphasize. He suggests that it is only in the classroom pedagogy that theory is revealed.

Hillocks' (1986) meta-analysis of research on written composition conducted from 1963-1983 categorizes four approaches to the teaching of writing and summarizes what works best. In the presentational approach, the teacher presents information about writing and assigns students tasks designed to illicit "good writing;" the primary method of instruction in the individualized approach is one-to-one; and the natural process approach uses very little formal instruction. Hillocks terms the most effective approach "environmental" and defines the role of the teacher in this approach as being that of an artful facilitator who utilizes a wide range of social-collaborative processes.

The Kentucky Telecommunications Writing Project was conceived as an open-ended opportunity for teachers with little or no prior experience as writers, or as teachers of writing, to work in collaboration with each other and with students. By interacting in written discourse, the participants considered ways to integrate writing throughout the curriculum, a goal of the state reform. The teachers served as facilitators in the project, but other than the "environmental" nature inherent in the design of the project, they did not prescribe to any one "best approach" to teach writing nor did they emphasize a particular mode of writing.

Myers (1983) identifies three theoretical approaches to teaching writing in the classroom (modeling, processing, and distancing), each with a different set of assumptions; he suggests that most research in the teaching of writing supports a practice that combines the three theories. By participating in the teachers-only discussion area of

the Kentucky Telecommunications Writing Project, teachers generated a variety of written models for each other to imitate (modeling), encouraged a discussion of ideas (processing), and provided real audiences for each other (distancing). These three theories, distancing in particular, inform the questions of this study.

Modeling, the first theory, is closely related to behavioral theories and suggests that writing is about producing text. In this approach, writing is taught by duplicating parts (Brown, 1915) in order to create a whole, and the writer “imitates or approximates the language present in the environment” (Myers, p. 4). Modeling can be seen as prescriptive, a focus on drill and correctness, but it encompasses any attempt to teach writing with an awareness of text and product: word choice, sentencing, form, and arrangement. Modeling theory as a framework for effective teaching of writing supports research that asks questions about the text (Polanyi, 1958; Winterowd, 1970).

Theories of processing, the second approach, come from cognitive psychology and focus on the mental process of the writer instead of on the text produced. In practice, the emphasis here becomes one of meaning, problem solving, and brainstorming. Within this research tradition are housed many current studies that look at the stages of the writing process and the writer’s discovery of meaning and content (Emig, 1971; Graves, 1975; Rohman, 1965; Nystrand, 1977).

Distancing, the third theory, views writing not as a product or a process but as a relationship between the writer and subject and between the writer and audience, shifting the emphasis to the social context for writing. The theoretical framework underlying the sociocultural context of language defines a writer, an audience, a reality, and a message.

Written discourse is shaped by the distance between the writer and the subject. The rhetorical situation and the distance from speaker to audience determines the form the writing takes as well as questions of style. Writing is considered appropriate, even “correct,” only in terms of the context and the social relationship (Moffett, 1968).

Theories of distancing are found in James Britton’s taxonomy (1975) of expressive, transactional, and poetic writing which states that all writing begins with personal experience (expressive). Britton and Moffett’s theories of writing development echo Piaget’s theories of child development: “The cognitive perspective expands gradually outward to accommodate audiences remote from self and to encompass subjects broader and broader in time and space” (Moffett, 1983, p. 153).

Teachers and their students joined the Kentucky Telecommunications Writing Project in an attempt to meet state mandates. Writing online with no models to follow, the teachers participated in a three-year project conceived as an authentic, problem-to-be-solved. Toward that end, writing was not taught explicitly according to discrete skills but was viewed instead as a vehicle for thinking about a wide range of issues within a community of others. Teachers, students, and online guests formed this learning community and all became writers and readers. The community provided a social context for their written discourse.

Like their students, the teachers in KTWP wrote daily. Their writing was functional, an interpretation of their experience. Writing, according to James Britton, makes meaning of personal experience: “We, as we live, must learn from experience, our own, first, and other people’s second. But we do not learn from experience left in the

raw, unsifted, uninterpreted. Expression, in any form whatsoever, is an interpretation of experience: we learn in the process of expression itself and we learn also from experience made available, brought to hand so to speak, by being expressed" (Britton, 1983, p.21).

Writing as a vehicle for cultivating the teacher's voice and for exploring personal experience is one way to create professional dialogue (Modra, 1989; McDonough, 1994; Yinger & Clark, 1981). By writing online teachers use language to "view themselves" for the purpose of behavioral change (Berlak & Berlak, 1981). Because it's often difficult to view ourselves, the discussion needs must be a collaborative event that includes an "an emotional as well as a rational dimension. Because behavioral change is personal change, it entails emotions. Emotions attach to the ways we view ourselves, our actions, and their results" (Osterman & Kottkamp, 1993, p. 34). According to Bakhtin, meaning exists only in the meeting of voices when teachers, as authors, both address and respond to the voices of others-- in the turning outward, in listening to the voices around them and in being moved to speak (Dyson, 1995).

The Russian psychologist, L. S. Vygotsky (1978), identifies this relationship between the role of language to make experience conscious and the social culture that makes consciousness possible. For Vygotsky, "Human learning presupposes a specific social nature and a process by which [people] grow into the intellectual life of those around them. . .in collaboration with more capable peers" (1978, p.88). Teaching and learning occur best within a sociocultural context (Mayher, 1990).

Daloz (1986) defines "good teaching" by saying it "rests neither in accumulating a shelf-full of knowledge nor in developing a repertoire of skills. In the end, good

teaching lies in a willingness to attend and care for what happens in our students, ourselves, and the space between us. Good teaching is a certain kind of stance. . . .a stance of listening” (p. 244).

In the Kentucky Telecommunications Writing Project, teachers taught writing while participating in an electronic discourse community, writing and reading each other’s words. Teachers became their own teachers, a different kind of professional development model, similar in some ways to the National Writing Project (Gray, 1969). The National Writing Project (NWP) invites teachers to form writing communities where they write to learn, learn to write, and learn to teach writing. According to Mary K. Healy’s experience in the Bay Area Writing Project, “From this sustained experience, we relearned how to teach writing from the inside out-- testing the methods which our colleagues demonstrated against our own immediate responses as writers” (p. 254). Like the NWP, KTWP represents a trend in the professional development of teachers, one that differs from traditional in-service.

Teachers’ Professional Development

Calderhead (1992) describes the need to improve our understanding of the professional needs of teachers, "If we are seriously to pursue the goal of reflective teaching for a substantial number of teachers in schools, we need to place the issue of teachers' own professional learning much higher up the agenda of teachers' in-service training needs" (p. 146). Extensive discussion among educators and researchers is

leading to a growing consensus on the nature of what constitutes an appropriate professional development system (Duff, Brown, & Van Scoy, 1995).

Rather than continue the "deskilling" model, rather than mandate improvement upon teachers by bureaucratic control, rather than believe that administrative praise, expert mentoring, or nudging will "bring out the best in teachers" (Blase & Kirby, 1992; Ceroni & Garman, 1994; Fletcher, 1991), current trends in professional development for teachers view teachers as independent, self-directed human beings and recognize that they have a history of experience that may be utilized as a learning resource; they have social roles and developmental tasks that influence their readiness to learn; and they have a strong need for immediate application of knowledge (Knowles, 1980).

The Kentucky Telecommunications Writing Project represents an independent, self-directed network comprised of teachers with a wealth of life experience, engaged in the challenge of integrating the technology into their work with students. Research studies of teacher learning are invariably situated in traditional learning environments, as opposed to a cyberspace network, and conclude that adult students learn best under the following conditions: a learning-centered classroom, personalized instruction, activities related to experience, a friendly and informal climate, self-direction, and flexibility (Conti & Fellenz, 1983). Efforts to integrate past and new learning include social forces as teachers analyze their own autobiographies as learners. Learning journals, critical conversations, and cultures created to support application of individual needs are strategies well-suited for teachers (Brookfield, 1995; Kiskis, 1994). Many of these elements were key factors in the Kentucky Telecommunications Writing Project.

Research in staff improvement at the Children's Center at the University of South Carolina (Duff, Brown, & Van Scoy, 1995) concludes that teachers need a learning opportunity that takes a broad view of teaching as a profession, a view that recognizes the "barriers and hurdles" inside as well as outside the workplace. A holistic view that encompasses personal growth as a part of professional growth, a broad spectrum of needs including physical and mental health as well as environmental factors, recurs within the body of research. For example, Bell and Gilbert's (1994) three-year study of teachers in New Zealand finds personal and social development intertwined with the professional.

The need for collaboration and participation is emphasized throughout the literature. Collaborative learning assumes that knowledge is socially, rather than individually, constructed by communities of individuals, and that the collaborative shaping and testing of ideas is a process through which individuals make meaning. Success for teachers as learners seems to come when learning is situated in a climate that fosters collaborative learning. Learners must be willing to listen to and respect different points of view, exercise responsibility for their own learning, and be committed to the group (Imel, 1991).

Teachers who participated in the Kentucky Telecommunications Project formed an electronic community in which they felt free to discuss whatever issues seemed noteworthy. They wrote for each other to read. A telecommunications network may or may not foster collaborative learning, but it is certainly unique in terms of a learning environment. Social learning theory (Bandura, 1977, 1986), incidental learning theory (Marsick & Watkins, 1990), and organizational socialization theory (Van Maanen &

Schein, 1979) were synthesized by Smylie (1995) to define an adult learning theory that explores the relationship between learners and the environment. He identifies seven specific conditions that may promote teacher learning:

- teacher collaboration
- shared power and authority
- egalitarianism among teachers
- autonomy and choice
- organizational goals and feedback mechanisms
- integration of work and learning
- accessibility of external sources of learning

Smylie's model describes some of the characteristics of the Kentucky Telecommunications Writing Project and illuminates this study of teacher participation and learning via an electronic discourse community.

The move to conceptualize teachers as reflective practioners capable of using informed judgement and exercising thoughtful decision making, embraces a view of teaching that is complex and holistic (Berlak & Berlak, 1981; Schon, 1984). The concept of constructivism holds that the learner develops (or "constructs") knowledge and that opportunities created for such "construction" are more important than instruction that originates from the teacher" (Ely & Minor, 1992, p. 8-9). As teachers examine their practice, they learn about themselves and their work: they construct knowledge about teaching and their work as teachers (Richert, 1992, p. 188).

A growing body of research suggests that teachers learn best when engaged in authentic learning tasks. Teacher-initiated research, inquiry-based learning that is field-based, and the opportunity to conduct self-studies are growing trends in professional development. Lytle (1992) indicates a need for staff development that regards people's diverse routes into the field as assets, begins with practitioners' questions, recognizes the need for building community, and creates contexts for knowledge generation.

According to Holland (1973), teachers have strong social needs and often feel isolated from their colleagues and dissatisfied with their work. Generally, teachers do not work together to support and encourage each other professionally (Ashton & Webb, 1986). Yet significantly, opportunities for collegial interaction have demonstrated a positive effect on teacher attitudes and student performance (Little, 1982).

McLaughlin (1994), drawing on three years of field work, illustrates a different way of thinking about teachers' professional development. Teachers who report a high sense of efficacy, who feel successful with today's students, shared only one characteristic: membership in some kind of a strong professional community which they identified as the reason they feel motivated and successful. Her research defined the attributes of healthy professional communities. They "embrace diversity, maintain problem solving structures, maintain strategies for critical review and reflection, exhibit high levels of trust and teamwork, and pay active attention to the ongoing renewal of community" (p. 48).

Currently, an increasing amount of attention is being given to the study of teacher study groups. Results indicate the study groups identify educational and school needs,

promote teacher empowerment, increase collegiality, and keep teachers up-to-date on current issues. Whole-faculty study groups show promise as a vehicle for integrating initiatives and focusing school improvement efforts on increased student learning. The focus of most study groups appears to be on the local school context as an alternative to traditional staff development (Charles, 1995; LaBonte, 1995; Sanacore, 1993).

Teacher networks appear to be one of the few realistic options for restructuring education (Mann, 1989). A comparative study of five professional teacher networks situated in Montana, Alaska, Idaho, Oregon, and Washington, respectively, concludes that networks have significant positive impact on curriculum renewal. Networks also provide teachers with the professional benefits of collegial relationships, reduce professional isolation, support individual classroom practices, and offer access to field tested materials and information (Stoops, 1993). Current research argues that computer domains, electronic discourse communities, offer one of the best sites for carrying out such dialogues between peers (Fey, 1994; Hawisher & Moran, 1993).

Clearly, the move is to explore new models for training teachers, collaborative models that empower teachers' own voices. "In educational change and educational research, the formerly unheard and undervalued teacher's voice has been accorded increasing respect and authority in recent years" (Hargreaves, 1994, p. 60). Studying teachers raises questions about how teachers develop and voice professional knowledge. "A growing narrative research tradition is demonstrating the impact of small, safe inquiry groups where teachers can share ideas and wrestle with dilemmas, a place for telling stories and constructing meaning out of the perplexities of teaching" (Sparks-Langer,

1992, p. 159). "Voice" is defined as "a necessary part of reflective teaching as it is an instrument of self consciousness that allows teachers to examine their beliefs and experiences. By talking. . . teachers raise to a level of consciousness the complex matters of their work" (Richert, 1992, p. 190).

Teacher participation and teacher learning, as demonstrated in the narratives and writing that the teachers post online, is broadly conceived (Sparks-Langer [1992]), but may include such things as: wisdom of practice (Shulman, 1987), craft knowledge (Leinhardt, 1990), art/aesthetics of teaching (Eisner, 1982; Kagan, 1988), teacher action research (Cochran-Smith & Lytle, 1990), and narrative inquiry (Connelly & Clandinin, 1990). This study is be "grounded in an image of persons as intelligent human beings, capable of reflecting on themselves and their behavior and revising their behavior in the light of reflection" (Berlak & Berlak, 1981, p. 256). "Reflective practice is an integrated way of thinking and acting focused on learning and behavioral change; it is individuals working to improve organizations through improving themselves. It is a powerful approach to professional development" (Osterman & Kottkamp, 1993, p. 1), and it is not easy (Mackinnon & Grunau, 1994).

This study of teacher learning explores a new model, a collaborative, professional development model that uses telecommunications. As an environment that may or may not support teacher learning, telecommunications serves as a vehicle for teachers to form a discourse community and offers a potential context for teacher learning. This study is not really about telecommunications, but telecommunications makes this study possible.

Telecommunications Networks

"Technological innovations have paved the way for new communities and collaborations to develop. While the modes of conversation have remained the same, the means by which these modes of conversation are carried out have not" (Kurshaw & Harrinton, 1991, p. 5). Telecommunications and the Internet offer several forums for professional development. Electronic journals, discussion groups, electronic courses, electronic conferences, e-mail, networking, and coauthoring are some of the possibilities (Monty & Warren-Wenk, 1994). Research on these various services is proliferating but does not appear systematic, nor does it seem to discriminate by form. Terminology also appears inconsistent. In addition to considering theories of writing and the teaching of writing, current trends in teacher education, studies of teacher learning over the long term, and recent developments in technology and education, this research project will extend what is now known about online learning communities.

Current literature in telecommunications research seems to range from glowing testimonials to quasi-experimental studies to a few controlled experiments usually of the technology. Although the online discourse is archived in an electronic text and is easily retrieved, the dynamics of the virtual community, the educational value of the interactions, and the complexity of participation are not capable of being reduced to controlled conditions; good qualitative studies are rare and the literature "is far from rich" (Ruberg & Sherman, 1992).

Telecommunications research is usually tied to a specific network but has not examined teacher learning *per se*. For example, the QUILL project in Alaska was designed as a three-year study intended to build on existing computer and writing research and became instead a study of a particular software innovation (Bruce & Rubin, 1993). More commonly, comparative studies focus on how electronic discourse differs from face-to-face interactions. For example, the Intercultural Learning Network (ICLN), a loosely organized set of participants, including elementary, middle, and high school students and teachers, junior college, undergraduate, and graduate students and faculty and a few participants from outside the educational system, explored the uses of electronic message systems for instruction (Levin, Kim, & Riel, 1990).

Current research focuses largely on distance education networks. A study of computer conferencing at the British Open University (Kaye, 1995) demonstrated that students and teachers can replicate electronically the dialogue that occurs in the face-to-face class and that in some respects (e.g., increased levels of turn-taking by students) electronic dialogue may be even richer. Computer novices mastered the technicalities of computer conferencing without having face-to-face training, learning instead by direct experience. This study concluded that "distance education systems should place more emphasis on active and cooperative learning strategies which value the personal experience and knowledge which all contribute" (p. 142).

Studies of electronic networks invariably talk about social dynamics and interactions. For example, recent research that analyzed teleconferencing developed an analytic model to categorize messages as interactive or non-interactive. Tracing a

"communicogram," a visual representation of the exchanges, revealed that although the majority of responses were non-interactive, they indicated "the reflections of the learners" (Henri, 1995, p. 159). In other words, computer mediated conferencing is an individual process in which the learner reaches personal objectives through support from members of the group.

The quest for new kinds of communication patterns is common throughout the research. "Online discussions are characterized as having multiple threads to the discussion and a non-linear pattern. Users can create their own syntax and lexical symbol system to convey and clarify affective expression" (Ruberg & Sherman, 1992).

Rice-Lively's (1994) work describes an ethnographic study of an electronic community comprised of university students involved in a seminar on networking. Ethnographic research explored the cultural meaning of the events and contributed to understanding of the applicability of ethnographic research and online education.

In analysis of an Earth Lab Project, Goldman, Chaiklin, & McDermott (1994) found that "the messages are thick with affiliation work. With many topics to cover and a pleasant relational space for communication, the conversations touch on issues of importance to the lives of each involved. The correspondents co-construct a space for the mutual exploration of their individual and shared lives" (p. 271). Computers and telecommunication networks support "the social view of writing, which emphasizes the communal contexts of literacy. Janet Eldred shows how computers have supported the social-minded theories of Lev Vygotsky, Mikhail Bakhtin, and others. Personal

computers. in addition to being the private tools they were originally conceived to be have become instruments for social intercourse" (Costanzo, 1994, p. 17).

In her case study of a teacher education course utilizing telecommunications, Schrum (1992) identified some of the requirements for implementation and pointed out fundamental stumbling blocks: "We are only beginning to find ways to facilitate integration of new technologies into the classroom for the improvement of teaching and learning. We have frequently not put into practice what we know about good education and innovation when attempting to bring about change" (p. 17).

Kulik (1994) conducted a meta-analysis synthesizing over five hundred individual studies about the effectiveness of computers as learning tools. His study concludes that students receiving computer-based instruction: learn more, learn in less time, like their classes more, and develop more positive attitudes. Other studies on student learning demonstrate that telecommunications helps students work collaboratively, solve problems, and experience writing as communication in the real situation. (Chen, 1994; Allen & Thompson, 1994). Fey (1993) found that an electronic environment where readers' responses link feelings to thought and where responses are shared with ease leads to more powerful learning for some students.

In a comprehensive study of "technology-rich" schools, the Critical Technologies Institute concluded that when technology was not a "marginal addition" curriculum and instruction were altered dramatically reforming and reorganizing learning by effectively using technology (Glennan & Melmed, 1996). Qualities and practices shared by these schools included: an emphasis on the individual learner, a focus on curriculum

frameworks and student outcomes. an easy access to computers. a project-based approach to learning. a developmental approach in harmony with a larger vision. an external funding source at the start. an improved communication among adults. a large budget. and an increased sense of engagement and attitude on the part of all participants. "These schools are representative of the best practices across the nation" (p. 34).

Telecommunications, a potentially interactive learning environment. makes it possible for teachers to form professional discourse communities (Butler & Kinneavy, 1994). Studies of electronic teacher networks have begun to appear. In an early effort to explore electronic conferencing as a form of professional development. the National Science Foundation (1989) evaluated a study that linked on-site workshops and computer conferencing. The rationale and the conclusions supported the two methods as having more of an impact than either would have had alone.

Results of a descriptive study conducted by Lincoln (1992) from in-depth open-ended interviews with faculty in higher education about the use of scholarly networks and professional self-image indicate that regular network participants formed communities with discussion of courtesy, equity, and self-image. She also reports that the style of conversation is informal and humorous as well as intellectual.

Watts and Castle's (1992) study of the NEA School Renewal Network discloses six necessary conditions for successful interactive networking: encouragement of affinity group development. equal portions of "high touch" and "high tech." the availability of qualified facilitators. an empowering network structure. a distributed expertise focus. and maximum accessibility.

In Alabama, fifty math and science teachers participated in a four-year project designed to train each other. Teachers met for inservice workshops at Auburn University, then began to use microcomputers, and finally trained other teachers. For rural teachers in particular, the project offered fellowship, shared problem solving, and relief from professional isolation (Baird & Swetman, 1994).

Electronic networks can provide a supportive environment. LabNet studies conclude that an electronic community requires careful design, user comfort with technology, and commitment; moderators play essential roles in nurturing collegial connections and reflective conversations (Spitzer & Wedding, 1995). Schrum's research (1995) on initial attempts to introduce telecommunication networking reveals major obstacles were lack of time, access to equipment, and resources for implementation.

The Creative Teaching and Learning Cooperative in Oklahoma has established a research protocol in which faculty collaborate via electronic mail, discussion groups, and retreats. Studies of the project reveal that 90% of the faculty voluntarily participate due in large part to the fast and efficient communication system (Malloy & McKeon, 1995).

Smyth's (1989) study of a distance education course conducted with primary and secondary teachers in Australia explores the struggle between a philosophy of socially constructed knowledge and a teaching pedagogy that is highly individualistic. He uses the lens of emancipatory pedagogy to address critical issues of reform and policy. "Teachers," according to Smyth, "have had a long history of having been treated as the 'objects' of other people's supposed reforms" (p. 206). His study supports the move to empower teachers via electronic discourse to own and analyze their teaching.

Hawisher & Selfe (1994) take a critical look at the rhetoric of technology, electronic discourse communities, and telecommunications. As editors of *Computers and Composition*, they reviewed research, published reports, and other observations. They argue that the “enthusiastic discourse that has accompanied the introduction of computers” must also describe the less positive and more problematic aspects of computer use. In particular, they take a critical perspective on computer conferencing and suggest that participants may “self-discipline themselves and their prose in ways they consider socially and educationally appropriate” (p. 389). They call for further studies.

Summary

From this literature on teaching writing, teachers’ professional development, and telecommunications networks, the following themes emerge that are relevant to the current study:

1. Writing allows teachers to make conscious the complexity of teaching.
2. Teachers, as adults, learn best in a supportive, collaborative environment engaged in authentic tasks that are self-directed.
3. Collegial interaction has a positive effect on teachers’ professional development.
4. Telecommunications enables teachers to form communities in which they can examine themselves and their work, constructing knowledge.
5. An electronic environment where readers’ responses are linked to emotions and thought impacts the nature of the learning.

CHAPTER 3 METHOD

In this study I investigated what happened when teachers with little or no prior experience attempted to meet the demands of educational reform by participating in a telecommunications project. I explored the nature of the teachers-only discussion and focused on the participation of three individual teachers. I used qualitative methodology and collected data over a three-year period from a variety of sources. By and large, the methods used to analyze the nature of the teacher learning were descriptive and interpretive. Since the study focused on teachers in one telecommunications project, and was limited to the particulars of that project and to the unique features of three teachers in that project, the resulting analysis may be characterized as a case study. This chapter describes the selection of the research site and participants, explicates the research method, defines its relevance to the research questions, discusses the research perspectives, and defends the research reliability.

Setting of the Study

Description of the setting. The Kentucky Telecommunications Writing Project (KTWP), a three-year project, was designed to support a small group of Kentucky teachers and students as they attempted to implement educational reform into their

classrooms. KTWP was funded for \$145,000 the first year and approximately the same amount for two more years thereafter by a grant from the Bingham Trust, a private foundation, in collaboration with Teachers & Writers Collaborative of New York City.

Application information was sent to every Kentucky school district, to the seven National Writing Project sites in Kentucky, and to personnel at the state Department of Education. Any teacher of any discipline (grades 4-12) from any Kentucky school was welcomed to apply. The only prerequisites were a willingness to use writing in the classroom, to involve students in curriculum decision-making, and to participate for three years. Fifty-one teachers submitted written applications, which included personal letters and letters of support from their administrations. Based on geographic location of the site, grade level of the class, and the level of commitment from the teacher as well as from the school district, five sites (seven teachers) were selected by a committee to participate for a three-year period. Each teacher received compensation in the form of materials and resources: project money enabled the teachers to purchase necessary materials (i.e., books, computers, phone access), and a technical support person was available to visit their schools.

The teachers chosen to participate in KTWP represented public, private, and parochial schools, 4-12, various disciplines, urban and rural, large and small. The sites and teachers included: fourth grade self-contained from Paducah in Western Kentucky; Chapter One eighth grade reading from Covington in Northern Kentucky; high school English from the Brown School in Louisville; sixth and seventh grade language arts and science at Saints Peter and Paul in downtown Lexington; and high school social studies

from rural Hi Hat in Eastern Kentucky. These sites, a diverse mix of geography, districts, schools, and classrooms, were representative of the state.

Via modems and phone lines, the pioneering teachers and students in the Kentucky Telecommunications Writing Project used technology to communicate online to meet the demands of educational reform. Students and teachers from each of the five sites designed writing activities based on their local communities and shared their work online using telecommunications to connect with the other classrooms in the project.

KTWP aimed to develop curriculum and program in the following ways:

- to improve the writing and thinking skills of students;
- to center writing activities around students and their communities;
- to base classroom activities on established writing theory and practice;
- to involve students and teachers in the design and assessment of the curriculum;
- to use technology to enhance writing instruction in thoughtful, meaningful ways;
- to emphasize and celebrate diversity and differences; and
- to address the seventy-five valued outcomes mandated by the Kentucky

Educational Reform Act and subsumed under six learning goals:

1. basic communication and mathematics skills;
2. core concepts from disciplines;
3. self-sufficiency;
4. responsible group membership;
5. thinking and problem solving; and
6. integrating knowledge.

Students and teachers in the five classrooms formed online conferences, in essence public forums for students and teachers to discuss a number of issues. Writing for each other, for audiences beyond their own classroom community, the students and teachers from the five sites worked collaboratively, becoming a larger community of writers. Each site “logged on” receiving and sending notes daily. The volume of writing exchanged over the three years was massive; often a hundred notes would be posted within a twenty-four hour period.

Different conferences were designed for different purposes. Students from the two high schools, for example, formed writing response groups, sharing and offering suggestions for improvement. Students from all sites initiated and moderated some of the conferences; often the writing was informal, such as “Video games” or “Pets.” Other conferences, like “Communities,” were more structured, in this case as students engaged in more formal writing and research about their communities. Conferences like “Poetry” or “Lit Groups” were initiated by teachers and were highly structured. Over the three-year period, dozens and dozens of student conferences were established. Student-centered writing projects were the mainstay of KTWP and the entire project was designed to improve the quality of student writing.

Teachers were free to participate in the student conferences, and often they did, but mostly, the teachers wrote to “Journal,” a private discussion area, a place for teacher-talk, a virtual teacher's lounge that students could not read and a place for the teachers to plan and discuss the workings of the student conferences. From computers at school,

pc's at home, and lap-tops on their travels, these teachers regularly "logged on" to their network. Once there, they read, wrote, and reflected, engaged in the same processes as their students. No requirements governed participation. The teachers themselves chose when, what, and how to write, and early in the project, they agreed to write online each week but often did not do so.

Although the number of teachers participating from each site varied from year to year, the seven teachers chosen initially from five sites did not know each other before the project, but they did meet face-to-face several times throughout the grant period as they attempted to involve students in classroom decision making, utilize telecommunications, and find ways to integrate writing across the curriculum. None of the teachers chosen for the project had ANY prior experience with computers, with curriculum design, or with student empowerment. Most had little prior experience with writing. One teacher even admitted in an early interview that she could not let KTWP interfere with her established curriculum and the way she taught.

Description of the subjects. Within the bounded system of the teachers' discussion area of the Kentucky Telecommunications Writing Project were at least seven teachers who could be observed more closely. In qualitative research, nonprobability sampling methods are purposive when the researcher selects a sample in order to discover, understand, and gain insight. In purposive sampling the researcher selects a sample from which she can learn the most (Merriam, 1988).

This study focused further on three teachers at three sites. Although all the teachers committed to three years of participation, participation levels fluctuated, and the

number of participating teachers varied because of, in part, project proliferation when other teachers from each site were invited to join. Emmy in Paducah, Sue in Louisville, and Beverly in Covington (see chart) were selected for this study because all three teachers participated regularly and consistently throughout the duration of the project. In addition, of the five sites, these three were the only sites where teachers worked alone. At the other two sites, Lexington and Hi Hat, the teachers functioned as a team, a somewhat different kind of experience.

PROFILE OF THREE CLASSROOM TEACHERS

1	2	3
Emmy Krempasky	Sue McCulloch-Visliser	Beverly Paeth
5 years, 5th grade	24 years, 15 at Brown	3 years, 1st, 2nd, 8th grade
Elementary Ed., BA	English Education, MA	Reading specialist, Rank I
Purchase Area Writing Project	First Louisville Writing Project	No experience with writing
Never used telecommunications	Never used telecommunications	Never used telecommunications
Western Kentucky	Central Kentucky	Northern Kentucky
Paducah	Louisville	Covington
Suburban, independent	Urban, public school magnet	Inner city, independent
McNabb Elementary	The Brown School	Holmes Jr. High
5th grade	11th-12th grade	8th grade
Self-contained	English composition	Chapter I reading

Data Collection

Since the purpose of this study was to explore the nature of teacher participation in a telecommunications network, this cyberspace-based case study was situated in a teacher-only discussion area on a private electronic network. In order to examine the nature of teacher participation over time and the teachers' interpretations of the experience, the case study database spanned a three-year period, the duration of the project, and relied on multiple sources of evidence (Yin, 1994). Data consisted of field notes compiled from online discourse, tape recordings and transcriptions of interviews, artifacts from the project, including newsletters and brochures, informal surveys, and participant observation notes taken during three planning meetings held in Kentucky.

Field notes. Field notes were comprised of the online dialogue, notes written and posted in a public forum by participating teachers. I monitored all online activity and compiled the writing. Significantly, the online discourse amounted to more than a thousand pages of field notes collected over the three-year period, from August 1992 through June 1995, downloaded and stored.

Interviews. Interviews focusing directly on the case study topic were conducted with the project participants throughout the duration of the project. Data were collected on-site during interviews in March, 1993, with seven KTWP teachers; in June, 1994, with ten KTWP teachers; in July, 1995, with seven KTWP teachers; and by phone in December, 1996, with three KTWP teachers.

Open-ended questions centered on classroom practice, teaching successes, curriculum problems, personal theories of teaching, and issues of professional change (interview protocols Appendix A). Each teacher was asked a common set of questions in the form of a one-to-one, conversational discussion. To minimize distractions, interviews were tape recorded using a small machine and long playing tapes. All interviews were conducted in private, and the average interview took about an hour.

Follow-up interviews, primarily for clarification, were conducted by telephone with three of the teachers. Interviews were audio-recorded and transcribed. Open-ended questions focused on describing their participation, interpreting their experience, and validating the study.

Artifacts. Since the inception of the project in August, 1992, until its conclusion in July, 1995, I collected data and had full access to all documentation of the project. I read applications and participated in the awarding of the grants; the proposals from the teachers and all supporting documentation were in my files. Other artifacts from the project, including student-produced newsletters and brochures were also collected. In addition, the participating teachers wrote chapters for a book, *The Nearness of You: Students and Teachers Writing On-line* (Edgar & Wood, 1996), published by Teachers & Writers Collaborative. Those writings were also part of the ethnographic record.

Surveys. Half-way through the project, I administered one survey (Appendix B). A set of informal questions was posted online to "Journal," the teacher discussion area, and teachers e-mailed their responses. The focus of the survey was each teacher's own writing, especially questions of confidence, purpose, and style.

Participant observation notes. Once each year, I traveled to Kentucky, making four on-site visits to attend planning meetings where participants met and talked face-to-face. These meetings were held in Louisville in November, 1992, in Lexington in March 1993, in Louisville in June 1994, and at Shakertown in July 1995. Using an unobtrusive tape recorder and making extensive notes in longhand, I observed and recorded these meetings.

Data Analysis

Data analysis in this case study was an inductive process relying on the “sufficient presentation of evidence and careful consideration of alternative interpretations” (Yin, 1994, p. 103). Theoretical sensitivity acquired during the research process and balanced by my personal and professional knowledge of the technical literature enabled me to recognize what in the data was important and to give it meaning (Hitchcock & Hughes, 1995). Conducted in stages corresponding to my questions, analysis focused primarily on field notes (compiled from the online discourse) and also on participant interviews.

Teachers-only discussion. To answer my first question, what is the nature of the teachers-only discussion in the Kentucky Telecommunications Writing Project (see Chapter 4), three years of online discourse-- the teachers’ notes written to “Journal” -- were mapped and patterns sought. The field notes, a total of 1,236 notes, amounted to more than a thousand pages. Close scrutiny of the three-year period revealed patterns in the discourse: frequency of writing, concentration of topics, and levels of participation. The analysis technique of putting information in chronological order (Yin, 1994)

included listing the authorship and general contents of each note by mapping each note according to which teacher wrote it, when she wrote it, and what she wrote about.

In an attempt to determine the rules of their online community and to define the culture, I selected one window of time halfway through the project and conducted an intensive analysis of a three month period (December 1993 to April 1994) of "Journal," the teacher discussion area. I sifted through the online discourse during this period-- a total of three hundred and ten notes (the average note was about 450 words) written by the teachers. Data analysis of this theoretical sampling of the discourse relied primarily on Spradley's method (1980) of domain analysis and was facilitated by the use of computer software, specifically *The Ethnograph*, which made it possible to reorganize and manipulate text according to different codes. Categories were examined, themes generated, and a final taxonomy enabled me to describe the network metaphorically.

Individual participation. To determine the nature of the individual participation of three teachers in the Kentucky Telecommunications Writing Project (see Chapter 5), I chose three teachers to examine as subunits within the case. To unearth and make explicit tacit understandings, instead of studying their participation holistically, I explored each as a separate case, taking account of unique aspects of individual cases (Merriam, 1988) and analyzing the embedded units (Yin, 1994). I resorted the three years of online discourse separating the notes of these individuals, rereading, summarizing, and categorizing each teacher's words. Descriptive interpretations were constructed explaining features and patterns of each teacher's participation.

Teacher learning. To answer my third and fourth questions, what is the nature of their learning and what factors fostered and constrained the learning (see Chapter 6), I shared my findings with the teachers and conducted final interviews. Participant verification allowed comparisons to be made between my interpretation and theirs. Cross-case comparisons were made between the three teachers' perspectives and then linked by tentative hypotheses, resulting in the final drafting of a descriptive and explanatory case study (Merriam, 1988; Yin, 1994). Patterns were determined using taxonomic analysis, and a final theory about the nature of teacher participation in a telecommunications network and its impact on classroom teachers was constructed. The explanation-building process reflected "theoretically significant propositions" (Yin, 1994, p. 111).

The research perspectives. At the time I helped write the initial grant proposal for the Kentucky Telecommunications Writing Project, I intended to be one of the classroom teachers involved in the project, but instead I entered graduate school at the University of Florida. During the duration of the project I maintained an active role, observing the project, collecting data, and supporting the efforts of the five participating Kentucky schools. On occasion, I myself posted notes to the teacher discussion area.

From the outset of the project, teachers understood their role in an experiment-of-sorts. In the initial application packet they agreed to collaborate in a project whose very design was based on openness and inquiry. They understood that the project would evolve and might ultimately serve as a model for other teachers and other projects. At the time, telecommunications was new and untried, and all participants considered

themselves to be part of a daring venture with no preconceived outcomes or expectations. They were willing to see themselves as researchers as well as “subjects” in a study.

Reliability of results. The findings in this particular study of the Kentucky Telecommunications Writing Project resulted from inquiry and not personal bias. Interpretation of the nature of the experience was based “only by the actions and words of its members” (Van Maanen, p. 3). Sufficient data-base evidence existed to support and confirm interpretations. To ensure trustworthiness, the results of this study were checked and rechecked with the participants. Use of participants’ names and other identifying descriptors served to hold the research accountable, and compatibility between my constructions and the teachers’ realities also ensured a high degree of truth value. The consistency and meaningfulness of the research results was attained from triangulation of multiple data sources (including artifacts, surveys, and participant observation notes) collected over a three-year time period. Plausibility of the study-- a study that produced theory grounded in the data-- make it applicable to other contexts, “generalizable to theoretical propositions (analytic generalization)” (Yin, 1994, p. 10).

CHAPTER 4

THE NATURE OF THE TEACHERS-ONLY DISCUSSION

To answer my first question, what is the nature of the teachers-only discussion in the Kentucky Telecommunications Writing Project, three years of online discourse were mapped and patterns sought. The 1,236 prose notes posted by the teachers of the Kentucky Telecommunications Writing Project to "Journal," their private discussion area, during the three-year period each averaged about a page in length. Although I read all of the notes at the time they were written and read them all again when I transferred them to print copy and bound them in large, three-ring binders, for the purpose of this study I initiated formal data analysis by carefully rereading the entire discourse. I read slowly, noting observations in three ways. First, using the analysis technique of putting information in chronological order (Yin, 1994), I listed each note according to authorship and general contents: mapping the number of the note, the date it was written, who wrote it, and what it was about. This process reduced more than a thousand pages of dense text, the teachers' notes, to an easily examined timeline constructed on about one hundred, three by five, index cards.

Processing naturalistically obtained data, such as this, is considered an inductive process where the researcher reconstructs the participants' constructions in an inductive manner (Lincoln & Guba, 1985). Therefore, at the same time I read and mapped the

discourse, constructing the timeline. I also sought patterns in smaller sections of time (usually three or four months) or according to the quantity of notes (approximately fifty to seventy-five). I recorded my observations, constantly asking, "What's going on here?" (Wolcott, 1990), compiling my notations, and making categories for each participant. These descriptive interpretations (Merriam, 1988) served to explain the nature of the teachers-only discussion in the Kentucky Telecommunications Writing Project based on features and patterns of each teacher's participation by year as well as over the three-year period.

Finally, I chose one, four-month window of time halfway through the three-year period (December 1993 to April 1994) of "Journal," the teacher discussion area, in which to conduct intensive domain analysis (Spradley, 1980), another way to determine the nature of the discussion in the Kentucky Telecommunications Writing Project. I sifted through the online discourse during this period-- a total of three hundred and ten notes (the average note was about 450 words) written by the teachers. Sorting domains was facilitated by the use of computer software, *The Ethnograph*, which made it possible to reorganize and manipulate text according to different codes. Categories were examined, themes generated, and a final taxonomy enabled me to describe the network metaphorically.

One thousand and one notes, the total number of notes mapped, were analyzed for the purposes of the chart on the following page. Two hundred and thirty-five notes were not included, because some notes were sent by students during the first semester of the first year before "Journal" was defined "teachers only," and during the course of three

years some notes were sent blank, some were deleted by teachers to erase errors, some were duplicates, and some were lost during the filing process.

Teachers from each of the five sites participated each year, though some of the teachers, like Nancy, entered the project late, and others, like Delores and Debbie, relied primarily on their colleagues to do the writing. In addition to the teachers at the five sites, participants included a poet in residence with the project, project directors, myself, and other educators interested in KTWP.

The following chart represents the number of notes written by members of the network:

Number of Notes Written by Members of the Network

Site	Participant	Year 1	Year 2	Year 3	Total
Covington	Beverly	30	33	23	86
Louisville	Sue	22	73	33	128
Paducah	Emmy	61	69	54	184
Hi Hat	Delores	4	1	0	5
	Bud	50	48	6	104
Lexington	Kathy	2	42	9	53
	Nancy	0	6	17	23
	Debbie	4	0	0	4
	Jane	4	14	3	21
	Group Notes	16	3	0	19
Director	Carol	101	27	0	128
	Robin	0	2	67	69
Poet	Mike	8	38	29	75
Others		21	44	37	102
TOTAL		323	400	278	1,001

The First Year

The online conference began officially in September 1992, and although telecommunications was new to the participants, no one received directions about *how* to write or what to write. None of the teachers had ever been online before, and they had no prior sense of what writing online might look like. The teachers defined their culture, and they chose to write their notes in the form of friendly letters, following a fairly standard form. For example, the notes on "Journal" usually opened with some type of greeting. Unlike old-fashioned one-to-one letter writing, "Journal" notes were "conferenced," so the audience was more public. Often the greeting was overarching: "To all, Hey everybody, To: KTWP Journal colleagues, Hellooo everybody, Dear fellow KTWP'ers, Dear Everyone, To: KTWP folks, Dear KTWP Teachers, Dear Friends, and Greetings to All!" Other times, notes were addressed to particular individuals, even though all participants read them; often they just began: "Yes. . . . Just a quick note, Hello, Good morning! Hey out there! Brrrrrr! I had a brainstorm just a minute ago. It sounds like... I know that you have to be in a state of worry and anxiety."

Notes usually had some type of closing followed by a signature. Closings were generally affirmations, words intended to leave the readers feeling good: "Take care, all. Merry Christmas! Have a good week! Happy New Year, friends. Keep up the good work. You deserve it. Pleasant dreams everyone. Fondly. Love. Love & aspirin. Love & twinkies. All my love. Love ya all! Congratulations and Enjoy. Good night all. All my best. Stay warm. Later. More soon. I promise to correspond more often. Hang in

there! Thanks. Let me know what I need to do. If I can help along the way, I'll be there."

Although the form of the notes was fairly standard, participants wrote their notes to suit themselves and their moods. The pages and pages of print-outs revealed patterns in the writing, patterns of idiosyncratic behaviors, patterns that show the uniqueness of each writer. The first note sent was from Bud, the high school social studies teacher from Hi Hat, who also helped direct the project, perhaps establishing the style as well as setting the mood. He wrote often and with a balanced tone, sometimes serious, sometimes very playful: "I feel like a butterball." In his notes, he mixed the personal with the professional, serving to nudge everyone else to participate more fully: "I really would like to hear your suggestions about the 'pods' you are using, Kathy. Would they help us on KTWP?" His notes were usually long and informative, and he addressed the other KTWP teachers by name, responding to their efforts with a cheerleader's enthusiasm: "Just wanted to add my Rah! Rah's! to our time in Louisville. I was really proud of you." Like a general, he planned and made requests: "All of you need to be thinking about how we want to structure our time." He also reported on the "movements of the troops," keeping the others up-to-date on the action: "How are your kids coming with their project ideas? Jane mentioned that St. Peters and Paul were about to decide to do a teen pamphlet."

Bud's level of participation reflected his prior experience and relative comfort at telecomputing. The same was true for Carol, who was the primary author of the grant and served as co-director with Bud the first year: "I share in the excitement of what can

happen here this year.” Carol was not a classroom teacher, but an administrator working with the Kentucky Department of Education. She wrote lots of notes, extremely long notes, and was busy organizing the network, arranging and opening conferences, reporting from Frankfort, and updating the teachers on reform mandates: “How do we use this medium to explore the culture/communities of all the sites? Can we relate geography to that? These are two important KERA (Kentucky Educational Reform Act) goals.” In her notes she was sometimes authoritative, pushing the teachers to have more theoretical conversations: “I’d like to hear more as you begin to move further into using Atwell’s theories.” Toward that end, she seemed to model the behavior she sought: “The reform is based on the belief that teachers need to be the decision makers, but how is that possible?” She encouraged the teachers and was full of praise for their efforts: “You can be proud of what you have accomplished.” In a friendly manner, she offered tidbits of detail from her regular life: “My car is still buried in a blanket of snow.” As the stress of her job mounted: “I am exhausted so this will have to be a quick note,” her tone became more curt with less humor and more directives: “I have been waiting for these kinds of questions to emerge.” She wrote long notes articulating her vision for the network: “I would like for us to remain a demonstration network,” interspersed with short notes about the load of work she was under: “an all-day and evening work session.” After May, her participation faded and finally halted altogether mid-way through the second year when she became director of the Region 8 Service Center in Eastern Kentucky.

Lacking Bud or Carol’s expertise, the rest of the KTWP teachers struggled during the first year of the project with the challenge of getting online and finding some

confidence as writers. Participation during the early part of the year was tentative as teachers mastered the technology and began to develop their voices. Everyone experienced technical difficulty during the early stages of participation: "I've been tempted to hurl my laptop out the window," and problems were a popular topic to discuss: "Sometimes it can be rather frustrating." But the teachers seemed to share the challenge and the dominant mood was optimistic: "We are all working out technology glitches. Everything will improve in good time." "I will be much better at this next year because of the frustration and thinking that went into this year." Slowly, they became more confident: "I'm really getting the hang of this telecommunication stuff." "I am slowly becoming an expert." "The computer has become not only a learning tool but a writing tool as well." "We are all finally computer literate!"

On the whole, the teachers began their telecommunications project with a certain degree of reservation: "Enclosed you will find a list of my students." Notes were fairly formal, sent almost like progress reports: "We are starting an 'Issues' conference per your request." Aside from Emmy, more than anyone, who was warmly enthusiastic and personal: "Love ya!" (Emmy, Beverly, and Sue are discussed in detail in the next chapter), most of the teachers wrote with a polite tone: "We would appreciate comments," reporting on their classrooms and discussing details of the KTWP collaboration, such as who will edit the next newsletter: "It has been very difficult to make deadlines." The three teachers at Saints Peter and Paul, for example, wrote weekly and signed all the notes from themselves as a group with three names:

Dear KTWP Teachers.

Our people are so eager to meet your students via the network. Please share their greetings with your classes. (That is, if you are on-line and actually received this). We are brainstorming, but are still not sure of what direction to follow. What is the video deadline?

Deb, Jane, and Kathy

Jane and Debbie, the classroom teachers at Saints Peter and Paul, relied on Kathy, the technology teacher, to upload and download all notes until necessity forced them to figure it out for themselves when Kathy went to Florida to attend a dying relative: "It would be inappropriate to call Kathy for help during this trying time. Soooo, here we sit. We push some more buttons-- ones we haven't ever pushed before."

The early months of the conference were a chaotic jumble of notes as teachers attempted to log on and send their greetings. For the first three months, teacher notes and student notes were intermingled. By December, teachers were expressing a need to really talk: "I'm eager for us to get a conference of our own. There are a lot of things to share that all of the ears out there don't need to hear everything." In January 1993, "Journal" was opened as a separate conference for teachers only. In addition to their school or site accounts, teachers were given individual accounts with their own user-names allowing them to write more personally within shared privacy. Suddenly, all the teachers became more prolific.

Improvements, at least in volume, were measurable. In the first three months of the project, for example, 39 notes were sent, most of them fairly brief. When the private conference was opened in January 1993, the same number of notes, 39, *most very long*, were sent in *less than three weeks*. Once "Journal" was established and teachers were

more familiar with the technology their own voices emerged. Marked changes occurred. All teachers participated fully: "I really feel compelled to share some of my discoveries with you," talking about themselves: "My second son's story is very akin to that of your significant other's," responding to each other: "Emmy, you know that all of us are thinking about you," and sharing enthusiasm about their learning: "The first thing I had to do was reflect on my own style and method of teaching. . . I have learned that it is okay to fail as long as I learn." By the end of the first year, everyone joined the discussion in a personal way: "I love reading notes from all of you," and all articulated pleasure at being "part of the family."

The Second Year

Over the summer and into the start of the second school year, online activity decreased as teachers reported mainly on travels with family and planned for the new year. Emmy was the most active of the teachers, writing frantically in early August: "What do I do? I'm a fourth grade teacher!" The other teachers responded with notes of support, advice, and plans: "You've got lots of friends out here to lean on!" An intense series of notes about Emmy's dilemma-- after six years teaching fifth grade she suddenly found herself, with little warning, assigned to teach fourth grade, the high-stakes accountability grade-- kicked off the second and most prolific year.

At the mid-point of the three-year period, participation peaked. A total of 400 notes were sent the second year, compared to 323 the first year and 278 the third. By December of the second year, the volume of notes was massive. From December 1993 to

April 1994, 310 notes (a total of 556,483 characters) were exchanged on "Journal." The average length of a note was 1,795 characters or about 450 words. At no other time were so many notes exchanged, and at no other time were notes as developed.

Domain analysis (Spradley, 1980) of these notes reveals patterns in the discourse, topics and features of the discussion. Although these patterns can be seen throughout the three-year period, close analysis of the mid-way point uncovered a relationship between the pressures of statewide mandates and the teachers' efforts to be autonomous, their need to feel secure about themselves and their work in the midst of massive reform, and their desire to define themselves as professional educators.

Discussions about KERA, implications for change, and the status of changes at the local level of each site were on-going; the resulting stress was a visible part of the "Journal" talk. Reform issues talked about the most included technology as integrated into the curriculum, not an add-on, and alternative assessment, especially using open ended questions and portfolios. Portfolio assessment in writing and mathematics was mandated, for example, in every fourth grade classroom. As assessment time neared that spring of the second year, one teacher reported, "I've been running running running. Exhaustion is close at hand. The stress level is at an uncontrollable level. The preassessment jitters is driving even the calm into turmoil." Emmy, now a fourth grade teacher, wrote long and often of the stress she was under: "I just feel the weight of the whole school on my shoulders and I just feel like collapsing." Another day she confided, "Fourth grade teachers are overworked! I'm serious! The pressure is outrageous! I've spent more time worrying and fretting this year than ever!"

Emmy's questions, confusion, and concerns, as well as those of the other teachers in the project, continued to be addressed by Carol, the State Department Regional Service Center Director, until Carol faded out and stopped participating. Carol wrote to summarize recommendations, clarify issues, and answer questions. Her view from the State Department, her KERA updates, reports, announcements, and news as it occurred, were a positive counterweight to the frustrations and stress: "The other news, it seems to me, is good--that teachers will be given more time to get ready before serious actions begin to kick in." At one point toward the end of the second year Emmy confided to Carol, "I know I wouldn't have ever made it back to school after Christmas if you hadn't given me support."

Carol's efforts to keep the teachers informed about reform and to answer their questions were not enough. The KTWP teachers continued to write about feelings of helplessness in the face of state mandates and as a result of characteristics of their professional and personal lives that were non-negotiable. As teachers mired in the language of KERA, grappling with the stressful changes, struggling to make the "big words plainer," they shared their angst: "I can't seem to pull all of this together so that I can write it in my planbook. My assistant principal is more worried about what is written in that book than what I'm doing in the classroom. He wants me to make sure that I'm teaching a learning outcome or is that learner standard. (What are they being called at this point? This is the frustrating part to teachers. UGHUGHUGHUGHUGH!)"

Negative sentiments expressing frustrations experienced during the second year of the project as teachers grappled with the demands of the reform comprised a large

domain: "Tomorrow's KERA inservice will test our mettle!" "I'm still struggling as to what this all really means." "I'm still struggling with the other content areas. I haven't felt comfortable trying to do what I know is best for my students and still conforming to local requirements." "I really need some answers to how to meet everyone's requirements of me. I feel pulled in so many directions. I WANT ANSWERS!" "You don't know what a basket case I've been. The stay in the hospital is a result of the struggle that I've been facing." "Like other teachers, I have had bad days when I have wanted to kill everyone but I truly love teaching." "Sometimes I feel like sand that gets battered and battered by unending waves, that never knows the end of repeated pummelings. I want the tide to go out." "I've swung from wanting to quit yesterday and sell handbags at Lazarus', to delight that my kids are suddenly excited about KTWP."

The Kentucky teachers in the project struggled with mandatory limitations, but by the second year they had developed strategies for helping each other balance the stresses of such constraints. Words of support appeared as a recurring pattern, and mutually, the teachers chose to create a community based on positive language: "Emmy and Carol, the discussion level between you two is remarkable!!!" "I marvel at the questions you posed about KERA." "We need more like you speaking and helping to shape what can truly be the most successful reform in the history of our nation."

Although criticizing was not often used by the teachers in their notes, at least not directly, when it was used, it was usually situated in a power issue. Who has the power and do we have faith in that leadership? was a popular refrain and another source of stress. For example, in talking about the statewide technology system and teachers'

responses to it, one teacher wrote. "A lot of them [other teachers] don't have faith that their technology coordinators are going to be able to help them." And their own administration-- or lack of it-- came under fire in some cases, such as when Bev wrote with some disgust that once again, "The principal had changed the schedule for next semester." Questions about the power structure of KTWP were also raised fairly often, but the critical tone that appeared elsewhere in other notes was adjusted when the criticism was closer to home: "I feel somewhat uncomfortable with this group having a captain when we are engaged in learning shared leadership."

Actually, the Kentucky Telecommunications Writing Program was itself a mandate considering the three-year commitment the teachers made to the project and the evolutionary nature of the design. A large portion of online activity was devoted to the inner-working of the project, some of which was mandatory, most of which was organic. Online planning involved all the teachers and covered all aspects of the project, ranging from the logistics of making travel plans for face-to-face meetings: arrangements about scheduling, planning, traveling to meetings, ride sharing, bringing students, reserving rooms, and finding equipment, to the more subtle negotiating of power and group decision-making.

By the second year of the project, even deciding where to meet, taking turns for who travels where, and reaching consensus about such decisions had become an integral part of the discourse: "Looks like I am facilitating the next meeting; however, I think we need to agree on a date, time, and agenda items together." "I agree with Bev that it [the next meeting] should be much nearer Emmy."

The wires were heavily used for online planning: "I think we need to do some planning before the 22nd so that we don't all come together with no idea of what to do"; delegating tasks: "We haven't heard from you all yet about your slides for the presentation"; asking questions: "How many packets do you think we should prepare?"; making requests: "Let me know what I need to do"; putting theory into practice: "Perhaps, since this project is to be ours, we are the ones that are to be guiding, molding, and forming this project as we go we all need to take more ownership"; volunteering: "I would be willing to facilitate the next large-group meeting if no one else has offered"; and humoring each other in their efforts: "Have a safe trip! Be careful on the West Kentucky Parkway especially if you are driving alone. It is known for people falling asleep and falling off the side!"

Clearly, the teachers in KTWP recognized in themselves the freedom to define themselves, at least within the limits of their mandates, and the process was not an easy one. "I don't have the answers," one of them wrote, but it was understood that collectively they did. Describing themselves for each other to read, reflecting on their own processes, the teachers in the study found plenty of opportunities to reflect, to recreate themselves for themselves. One way they did it is by listening: "I think I am a good listener." "Listening to what other people have to say can be a learning experience."

Listening to each other describe themselves, they consciously became a team: "I will bend over backwards, go to extraordinary lengths to avoid hurting anyone's feelings." "I'm good at getting the job done. (I was the oldest child)." "My grandfather was the most honest person I have ever known and he taught me to value honesty." "I think that

being the youngest of seven has given me a wonderful gift of compromise." "Sue, the responses to your team-building questions have been wonderful, enlightening."

From team-building activities that shared something they knew about their own team-working skills to writing about their "hot buttons" and other personality traits, during the second year of the project, the teachers learned to open-up, to become reflective readers and writers and thinkers: "A serious dialogue is difficult for me at times." "Some of my best thoughts come in rattles." "Most of the time I wander around here talking to myself and only partially verbalize thoughts."

Language skills, reciprocity, tolerance, trust, and willingness to participate, are old fashioned values/skills necessary for successful community building anywhere, whether in a classroom or lodged in cyberspace. The network provided the opportunity for teachers to collaborate, to share power and authority, to recognize each others's expertise, to meet personal challenges, to participate in decision-making, to integrate their work with their learning, and to have access to colleagues and resources. The opportunity existed but what the teachers made of it was determined them.

According to Van Maanen, "A culture is expressed (or constituted) only by the actions and words of its members and must be interpreted by, not given to, a fieldworker" (p. 3). Domain analysis revealed patterns of language inherent in the words the teachers wrote. As the teachers on KTWP defined themselves and their project, over and over and over again they used the same two words: I will. "I will do it," they wrote to each other. "I will send, I will attempt, I will follow-up, I will call, I will start, I will fax, I will put together a notebook, I will get your materials to you, I will pass this invitation along, I

will reread. I will talk. I will save. I will get that to you. I will post a note. I will take the computer. I will open a conference. I will tinker with the options. I will try. I will check. I will write more. I will mail copies. I will keep you posted. I will critique. I will be back. I will tell you. I will summarize. I will ask. I will bring. I will make sure. I will go through it. I will start. I will work. I will get it done. I will plan. I will explain. I will get caught up. I will be authoring. I will meet. I will have. I will confirm. I will promise. I will keep trying."

With determination and commitment, promises were made and promises were kept, and another social skill appeared patterned throughout the notes: The teachers apologized to each other often. Most frequently, the apology was connected to how often they were writing. Equally, they felt they were writing too much: "Forgive the length of my notes"; "I'll try to be more succinct in the future," or they felt they were not writing enough: "I'm sorry that I haven't been online in awhile." "Sorry, I have not been writing at least once a week like I promised."

Apologies were also made regarding the quality of the writing's content: "I hope it isn't seen as rambling." They apologized for digressing, disagreeing, upsetting, and talking behind someone's back. All apologies in this category represent a fear that they offended their readers. It seemed important to maintain that sense of community support and to avoid a critical tone: "If I gave that impression I am very sorry." "These are all some thoughts to make us think, not make anyone angry."

Apologies were made often for problems beyond their control: how text appeared online, student work that didn't get done as promised, failing to get something done

sooner, and glitches that were a part of their telecommunicating. Sometimes the sender used a faulty command, sent a repeat upload, or had difficulty using the online editor. All of these problems were inherent in their process of continuing to master the technology. Sometimes errors just happened, like the morning Emmy accidentally sent a piece of student writing to "Journal": "Ooops! Sorry about that. So much for putting on pantyhose and trying to send notes so early in the morning!" And often lines would be missing in text and strange extra characters appeared because of forces beyond the sender's control.

By far, the largest category isolated in data analysis was all about supporting each other. Reciprocity, positive feedback, encouragement, validation, and affirmation. Sharing sympathy was an unspoken commitment. This domain was so full, that simple listing seems effective here: "Keep up the good work. I told you you would get a lab, remember? It is a good question. You are correct. Jane's analogy of a marriage is a good one. How right you are! Nancy, I enjoyed your note. I think it's a great idea. You all are a wonderful group of dedicated teachers who care about kids. It is good to have you back online. Jane, I'm very impressed! I respect you professionally and personally. Jane and Nancy, bravo for getting Chris involved. Our students look forward to your remarks because you have been so careful about dealing with their psyches. I know that you have to be in a state of worry and anxiety. You are a remarkable group and I am proud to be part of you. I sat here laughing out loud at your note about your reading habits. Can you feel all the bytes of good thoughts and love coming your way??? I'm so sorry to hear about your problems. I want to formally congratulate Beverly on being nominated for the

Chapter One National Recognition Program. You do everything with real excellence. Jane, you should be proud of yourself. We are here for support. I have a great deal of respect for the differences each of us brings. I learn something each time I am online. There are many truths. Your "sisters" won't let anything bad happen to you. After a long hard day I find writing and reading KTWP stuff such relief! I cannot begin to tell you how much I treasure your part of KTWP. It was a pleasure to come home to find you all chatting away. I was proud to be part of us!"

Many notes used the word "thanks." Teachers wrote: "Thanks for response, for help, for thinking, for questioning, for notes, for advice, for good wishes, for listening, for the photos, for the words of encouragement, for the information, for insight, for time, for mail, for the reminder, for recruiting, for hospitality, for sensitivity, for the message."

Requests for help were usually answered: "If I don't write about everything I promised please remind me every once in a while." Instances of helping behavior-- giving phone numbers; sharing information-- how to open a conference or save in ASCII; answering questions; finding information; volunteering to respond, moderate, or contribute energy to one task or another were woven throughout all notes.

Reflection about projects was a regular topic: "I still have serious misgivings about the haste with which this project (a video project) was launched, the vagueness of the audience and purpose, the time it will take from an already stretched curriculum to do any meaningful taping and scripting." Almost always the tone was polite ("I have some questions") or positive ("The more I think about this, the more I like the idea"). Often teachers reminded each other that the work was not easy: "The challenge for us adults,

and ultimately the older students, too, is to figure out how to find compromises and solutions to the problem that satisfies everybody's needs."

The kinds of work these teachers did, the work that was necessary for their professional lives, also included sharing ideas and asking questions of each other professionally. There were no easy answers: "Why shouldn't the same thing be happening with teachers? If it isn't, then are we continuing to learn? Do we really want to produce graduates who can only deal with things if they remain fixed and constant-- abide by the 'right' answer?" The solutions and compromises seemed to come from collaboration when it works:

I am asking you to pay special attention and to point out to your students the writing from Trisha Fitzsimmons at Saints Peter and Paul school asking for volunteers to join a writing group to write a fictional chapter book. This letter is in the "Fiction" conference. I've got a group here that is extremely excited about this project, but need input from other sites. Together, all participants will edit and revise -- it should be a valuable learning experience for all who participate. Our site will be responsible for the actual publishing of the finished product. I would hope that every site will have volunteers. Remember we also need illustrators. Their role will be to take the finished book and illustrate as they feel appropriate.

Success also seemed inherent when details of projects done individually were shared with candor and used for further reflection:

"My eighth graders all wrote, illustrated and bound personalized Christmas story books for their first grade 'little brothers and sisters.' The pride of authorship was evident as they sat and read these books to the little ones. The response they received was varied. Some were overwhelmed with joy-- others put them down and turned back to play. One little girl threw hers on the floor and jumped on it. The author was horrified. We all used this experience to talk about the real world of publishing and what thick skin you have to have to survive it."

The teachers worked hard the second year, writing often and at length, reading and responding, creating their network: "I could literally spend the next couple of weeks responding to comments and questions that are part of the KTWP notes that I have downloaded since December. I think what I need to do is to work at it as I can, selecting what seem to be critical issues to me." Time was often a problem for KTWP teachers:

Usually, I would capture, edit, highlight, and hang the notes. While this is going on, I have so many reflections and observations on what I've read. BUT, what happens???? Well, it's back to teach another class, settle a dispute, answer phone, etc., etc. Where do all my brilliant thoughts and meaningful responses to student writing go? Right out the proverbial window. By the time I actually sit down to write, my fervor is gone, my ardor has cooled. If this is what happens to the grown folks who know how important this all is, what can we expect from students? Remember when one of yours wrote about his terrible family life? It caused a sensation here. We were on our way to computers at the time, so he got some immediate feedback. Know that if they had had to wait a couple of days to get to the machines, their minds would be off somewhere else. The poem your student just sent touched me deeply because I can feel his pain that is shared by so many teens. I need to sit down and tell him so right away- usually I can't. Then I don't.

Whatever the constraints, and it seemed to be somewhat different for each of them, some things they shared in common, like motivating learners, making learning meaningful: "How can we get students talking more to each other, weighing what has been said, learning how to read and respond to one another rather than passing each other in the electronic sky and meeting only occasionally?" "How can we help students become more thoughtful about their own writing?" "How can you help others through the work that you do on KTWP?"

The answers for this particular group of teachers seemed to lie in building a community that connected real people, a community that collaborated and took pride in

their work, and such sentiments were readily expressed during the second year: "I really get a sense of grounding from KTWP. Working with all of you gives me a confidence boost. Nice to feel like I belong." "We need to get together every once in a while to vent frustrations and to pat each other on the back for all the good things we accomplish."

Belonging, that sense of family and place, was created by sharing pieces of personal selves as well as the professional. Even though the teachers never met each other's families, talk of relatives, relationships, recipes for soft pretzels, dog stories, family customs, friends, and family trips, appeared throughout the discourse: "Bev, your description of Greg [her husband] thawing the pipes was great. I know too well that scenario... Johnny and I lived in a log house for five years and every single winter the pipes not only froze, but burst. One winter we literally went ice skating on our kitchen floor. Tell Greg to be thankful he has a basement to work in; we only had a crawl space. I can just see you upstairs in your cold office typing away -- in my mind you are wearing ear muffs, a big thick sweater, and those wild crazy animal slippers!"

Talking about personal stress was one of the most frequent topics the second year of the project. The teachers wrote about their lives, telling stories of home, of school, of their communities. Their voices speak for themselves as blocks of text makes patterns: "Over the week-end a seventeen-year-old brother of a student was shot and is in serious condition after major surgery. There is never a dull moment here and sometimes, I just need time away from all the craziness." "We just had our first drive-by shooting, last night, at least the first one that I've heard about around here. Someone shot into a bar and hit a 78 year old woman, the aunt of the owner and drove into the snowy evening. No

motive established yet, and no suspects. What's happening to our society?" "I hope things return to normal soon. My father's fears which seem to be great now in normal circumstances [a retired coal miner with "Black Lung" disease] are magnified even more in conditions like this. He can not rest, thinking that if my mother becomes ill, that we will not be able to get her to a doctor, that they will freeze to death if the electricity or gas goes off. When your body begins to betray you, somehow you begin to believe that you are at the mercy of all external forces. And a lot of elderly people are. Two people died yesterday as a result of the cold in Ky." "He [the principal] did not want me worrying about it over the weekend [losing her Chapter 1 classroom]. Fat chance of that happening. I was only up all night thinking and worrying about it. I've thought of nothing else since the meeting yesterday." "I'm covered from head to toe with red blisters oozing junk. My guess is poison oak. I've soaked in oatmeal. I've applied every ointment known to WalMart."

Predestination, unavoidable disasters, meetings, conferences, bitter cold, flash floods, snow days, burst pipes, problem pets, road conditions, rain, personal injuries, dinner plans gone awry, frustrations, illness, student fights, paperwork, blizzards, car problems, furnace problems, flu, positive Mammograms, car wrecks, broken bones, leaking roofs, pulled muscles, portfolios, abscessed teeth, root canals, sleep deprivation, dogs dying, bills, children marrying, arthritis. . . . many things happened the second year, and many stories were told.

The frequency of the personal writing, the detailed nature of the notes, and even, in places, the conscious acknowledgment of the teachers, suggested that technology itself

was a kind of strength solace-- as this comment written during the LA earthquake insinuates: "I just thought it was interesting that although the vehicular highways were down, the information highway continues to roll."

When the blizzard outside resulted in a blizzard of online notes, as teachers had time to write and read and think, humor became another strategy for dealing with cabin fever and dangerous weather: "If we don't get back to school, we are all going to die of eyestrain." Humor and good-natured bantering was often the response to personal stress, as when Bud, the coordinator of the project, had a car wreck (that turned out ok) during a particularly bad blizzard: "Did you sort of get what you deserved-- running around like a bad teenager when God and the governor were telling you to stay wrapped up in your lovely blanket?"

The Third Year

The third and final year of the Kentucky Telecommunications Writing Project began with some obvious changes, mostly changes in focus and in leadership. During the summer, KTWP teachers attended a writing workshop in Louisville and began drafting their thoughts about using telecommunications in their classrooms for possible publication. Teachers & Writers Collaborative of New York City invited the KTWP teachers to submit chapters for a book, tentatively entitled *Telecommunications Is Not About Computers*. It was at that workshop that Robin Lambert, the new project director, was introduced to the group. Robin was hired, in part, to help the group realize grant goals.

All the project participants had pledged to act as a model for other teachers and other schools, sharing what they learned. During the final year of the project as the KTWP teachers began to be invited to speak at inservices and professional conferences, they talked online about the purpose of the project beyond their own classrooms. "Proliferation" became an issue: "I'm thoroughly sickened by the word proliferation. I know that the grant's purpose is to get out the word about how technology can be used in the classroom in ways other than electronic worksheets. I'm all for that! However, making and cloning more of us isn't the best way to proliferate." The discussion was complex and they questioned their reasons for seeking a broader professional community: "We will have to make sure that we don't get so comfortable in our own little world that we have created that we don't keep trying to make it better. Or looking outside our world and seeing what others are doing." "You don't have to prove that technology is the greatest thing since white bread, but what you can share with teachers is how it can and should be used--not just for student growth but for teacher development as well."

From the outset, the teachers had held on to the idea that the project was all about technology. Certainly, problems with getting online, busy phone lines, running out of online connect time, down computers, line noise, uploading, classroom management and scheduling, sending laptops home with students, implementing school technology plans, and learning other networks' systems (KETNET, Internet, KIDlink, Breadnet, local BBS, PRISM) were all part of KTWP's goal to help teachers master technology, and all had played a large part in the online discourse as many notes about "technology" were exchanged over the years. By the third year, all teachers voiced a sense of expertise:

"Yesterday, I sat in a room with eighty-seven teachers from all over Kentucky who are about to plunge into telecommunications. I was identified as somewhat of an expert because of KTWP and was immediately surrounded by eager but scared people." "I spent the rest of the Monday with our district technology coordinator. He's really a great guy! He has the techie mind and I bring in the educational side. We are making a great team on several important projects." "I have been working with Marian, our tech center coordinator, about using telecommunications in our district. We want to get the district hooked up for next year so that elementary, junior high, and high school students can do some projects together."

This growing sense of expertise colored the nature of the discussions on "Journal," especially in terms of professional development issues. "I'm nervously awaiting the first day [of school]. I've worked all day on computers and my classroom after a full day of staff development. UGH! When will staff development be delivered to meet the needs of the staff?" "We have been inserviced and professionally developed to death." For the teachers on the network, professional development at the local level was a failure; they viewed professional development as something they did for themselves. They had begun to see themselves as providers of staff development and as such took steps to make that happen. As the teachers at Saints Peter and Paul wrote in August: "We want the status as in-service providers again. We are continuing to work within the Diocese as a resource for information for others wanting to get online somewhere, anywhere."

During the third year of the project, the nature of much of the teacher talk centered on the professional development of the participants, and the primary focus of the network became curriculum. Under Robin's leadership, online time was devoted to planning and managing a complex authors' project: "This author project is like a big puzzle, working out who can do what, with whom, for how long, and when." Robin wrote 67 of the 278 notes during the third year, more than any other participant. "Please let me know by September 9th about how many kids you think you'll have who will want to work with the authors and about how many writings you think they'll post a week. This is just an estimate-- I promise not to hold you firmly to it, but I need to have an idea when I approach the writers." She itemized business and took care of it too, establishing deadlines and finalizing grant business ("There is very little room for financial maneuvering."). She was enthusiastic, writing with a mix of personal and professional. As one of the teachers wrote to her: "Robin, I can't tell you how pleased I am that you are out there. I get the feeling that you are always reading, thinking, doing. Your energy is contagious!"

In spite of the warm welcome given to Robin, and perhaps because of the changes in leadership and focus, other subtle but noticeable changes occurred that last year. Most notably, participation slowed, gradually declined, and eventually faded out as the year ended. During the third year, the volume of teacher notes sent to "Journal" was lower than at any other time during the three-year project. Every single participant wrote significantly fewer numbers of notes and the notes were much shorter. Gone was most of the personal talk. Instead, as mentioned, the talk was about technology ("like driving a

car"); issues in education (school-related violence, class size, site-based politics, and the like); and curriculum ("We are up to our ears in novels"). The year ended, as it began, with a writing workshop and the opportunity to revise and refine chapters for the book. Several teachers were unable to attend.

Summary

At the beginning of the project, few of the teachers had any prior experience with computers and none of them had ever participated in a telecommunications network. Most did not consider themselves to be writers, and all were grappling with massive curriculum innovation mandated by statewide education reform. The special funding provided by the Kentucky Telecommunications Writing Project enabled them to try something new, on their own terms without models or prescriptive expectations. The teachers were invited to participate over a three-year period with few requirements or barriers.

In the teachers-only discussion area, "Journal," teachers wrote more than 1,000 notes in which they talked freely about their personal and professional lives. They planned and they reported. They listened and they responded. Together, the participating teachers created the network; they defined it; and they used it to meet their needs. Over the three-year period, they became stronger writers and teachers of writing, they mastered telecommunications technology and experimented with the integration of technology and curriculum, and they became members of a professional community that supported each individual's growth.

Using the metaphor of a quilt, it is as if, during the first year, the teachers were handed the materials and given time to learn how to use them. At the same time, they began to manipulate the materials: crafting, drafting, and designing something of use. By the second year, they had a working network and through hands-on learning had mastered the craft. At this stage, their focus became more content specific: reform, curriculum, and classrooms. Simultaneously, time was given to examining and understanding process: what was happening, how could it be better? The language was positive and supportive. The individuals were conscious of their relationship to the group and efforts were universally geared toward group successes. In the electronic network they created, members were part of a community whose main function was warmth and support, encouragement, and listening. By the third and final year, they had begun to share their work with others, writing and talking in a larger professional community.

CHAPTER 5

THE NATURE OF INDIVIDUAL PARTICIPATION

Although all participants were considered in the analysis of the teachers-only discussion, the focus now narrows in an attempt to determine the nature of the individual participation of three teachers in the Kentucky Telecommunications Writing Project. In this chapter, analysis focuses specifically on interpreting the participation of three individual teachers (Emmy, Bev, and Sue) at three sites (Paducah, Covington, and Louisville), examined as subunits within the case.

In an attempt to unearth and make explicit tacit understandings, instead of studying the participation of individual teachers holistically, I explored each as a separate case, taking account of unique aspects of individual cases (Merriam, 1988) and analyzing the embedded units (Yin, 1994). I resorted the three years of online discourse separating the notes of these individuals, rereading, summarizing, and categorizing each teacher's words. Descriptive interpretations were constructed explaining features and patterns of each teacher's participation.

These sites (see chart) were selected because they represent the only project sites with just one teacher, rather than teams of teachers, participating as an individual. Of the five sites initially chosen to participate in KTWP, two involved teams of teachers working together, and throughout the duration of the project, individual participation

fluctuated as newcomers joined the network. These three teachers participated consistently over the three-year period, making it easier to compare their online experiences.

PROFILE OF THREE CLASSROOMS

1 Emmy	2 Bev	3 Sue
Western Kentucky	Northern Kentucky	Central Kentucky
Paducah	Covington	Louisville
Suburban, independent	Inner city, independent	Urban, public school magnet
McNabb Elementary	Holmes Jr. High	The Brown School
5th (4th) grade	8th grade	11th-12th grade
Self-contained	Chapter I reading	English composition

Paducah. Paducah is a small, rural city of approximately 29,000 citizens in the western part of Kentucky where the Ohio River meets the Tennessee. In 1992, McNabb Elementary, in the Paducah Independent School District, served approximately 640 students, of which 44% were Black and 54% were White. More than half of the students at McNabb qualified for the free lunch program, representing low income families. A fifth grade class, self-contained, was the first site selected for the Kentucky Telecommunications Writing Project. The teacher, Emmy Krempasky, described her 25 to 30 students as a heterogeneously mixed group.

Covington. The city of Covington is located in Northern Kentucky directly across the Ohio River from Cincinnati, Ohio, creating an urban area of more than one million

people. At the start of the project, Covington Independent School System was the state's largest independent school district, serving approximately 5,300 inner-city students.

Holmes Junior High had 800 students and was in the process of adopting a middle school model. Bev Paeth's Chapter I reading program served 20 to 25 students in five different eighth-grade classes. Students scoring at or below the 49th percentile on the CTBS, many who had failed one or more grades and were reading below grade level, were identified as eligible for Chapter I services. The class was 27% Black and 73 % White.

Louisville. The Brown School is a first- through twelfth-grade urban magnet school, part of the Jefferson County Public Schools in Louisville, Kentucky's largest city. At the time the study was initiated, the school attempted to maintain an equitable gender, race, and socio-economic profile, representing every geographic and demographic element of Jefferson County. The six hundred "independent thinkers and learners" who attended Brown applied for admission, were screened and interviewed, and were accepted based on their willingness to commit to the program. Self-described as:

a community of learners committed to nurturing creative growth in body, mind and spirit; appreciating diversity amongst themselves and others; challenging accepted beliefs and shaping new understandings; and pursuing academic rigor, the staff and students are currently re-visioning their school by building into their norms cross-age groupings, interdisciplinary classes, flexible blocks of time, and extensions of the school walls, days, and year.

Sue McCulloch-Vislisl's eleventh- and twelfth-grade composition class, Comp III, was devoted to "good and effective writing."

Clearly, these three sites differed in many ways, such as location, kind of school, grade level, and subject taught; yet the three teachers at these three sites had at least one

thing in common. All participated regularly and consistently throughout the duration of the project, and like their sites, Emmy in Paducah, Bev in Covington, and Sue in Louisville differed too (see chart).

PROFILE OF THREE TEACHERS

1	2	3
Emmy Krempasky	Bev Paeth	Sue McCulloch-Vislisl
5 years, 5th grade	3 years, 1st, 2nd, 8th grade	24 years, 15 at Brown
Elementary Ed., BA	Reading specialist, Rank I	English Education, MA
Purchase Area Writing Project	No experience with writing	First Louisville Writing Project
Never used telecommunications	Never used telecommunications	Never used telecommunications

Emmy Krempasky. Emmy, the teacher from McNabb Elementary in Paducah, was a graduate of Murray State University with a bachelor's degree in elementary education. The summer before the project started, Emmy had attended the Purchase Area Writing Project, a National Writing Project site where teachers are trained in writing process theory. It was at the Writing Project that Emmy picked up an application for KTWP. At the time she had been teaching fifth grade in Paducah for five years. Prior to that she did her student teaching in Belize, Central America. At the start of the project, Emmy had never utilized telecommunications, and although her school was fitted with an Apple IIe computer lab, the most her students had ever used it was with another teacher, once a week for thirty minutes. The second year of the project, Emmy was moved from fifth grade to fourth grade. Emmy wrote in her initial application, "I am willing to learn

from other teachers and from my students. This grant seems to be about four things: children learning through writing, children learning with technology, children having a voice in their education, and teachers sharing and learning from each other.”

Bev Paeth. Bev, from Holmes Junior High School in Covington, graduated from Northeastern Illinois University in Chicago in 1969, took time off to raise a family, received her Master's from Northern Kentucky University during the first year of this project, and then continued to work on Rank I certification and a Reading Specialist endorsement. At the start of the project she had taught for three years: first and second grades in Chicago and eighth grade in Covington. Although Bev had no prior experience with modems, her classroom was already set-up as a computer lab. She had experimented with a reading and writing workshop model based on the work of Nancie Atwell. According to Bev, “I am allowed to design my own curriculum and my only concern is time. I give the students an active role in designing the curriculum, the classroom environment, and in decision-making. I struggle with writing just as my students do. I share with them my concerns about writing, and together we work on improving our writing by working together and sharing ideas.”

Sue McCulloch-Vislisel. Sue taught for 24 years, the last fifteen at the Brown School in Louisville. Educated at the University of Washington in Seattle and at Stanford in the 1960's, she was a participant of the first Louisville Writing Project, had certification in gifted education, and was an active member of the Coalition of Essential Schools working as a Citibank/National ReLearning Faculty member. According to her, she had “complete freedom to design the curriculum in whatever ways I feel appropriate

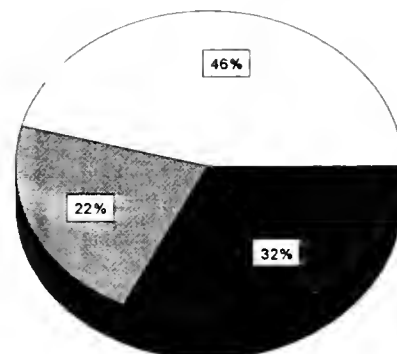
to get the students to the goal.” The school housed five computer labs, each one containing 20-30 computers. Although many students had their own compatible computers at home, laptops were also available to students for at-home and weekend use. At the start of the project, Sue did not own a computer and had no prior experience with telecommunications.

Interpretation of Participation. Although they were very different kinds of teachers with a wide range of experiences, all three teachers participated actively and wrote regularly throughout the duration of the project. All three participated willingly with their students and remained involved from the beginning until the ending. The pie chart represents the quantity and frequency of notes written to “Journal” by Emmy, Bev, and Sue over the three-year period. Emmy contributed 184 notes, Sue sent 128, and Bev wrote 86. Such information is deceptive, however, since it does not take into consideration the length of the notes, or their contents.

In an attempt to determine the nature of the individual participation of the three teachers and ultimately the nature of their learning, I sought patterns in their words. I examined their written contributions to the three-years of online discourse and

Participation Ratio

Quantity and Frequency



□ Emmy ▒ Bev ■ Sue

their oral comments made privately to me in a series of informal interviews conducted throughout the grant period. In order to unearth and make explicit tacit understandings, instead of studying their participation holistically I explored each as a separate case, taking account of unique aspects of the individual cases (Merriam, 1988) and analyzing the embedded units (Yin, 1994). Descriptive interpretations explained features and patterns of each teacher's participation and the nature of their learning.

Emmy

As indicated in the pie chart, Emmy wrote the most. In each of the three years, the volume of Emmy's writing doubled and even tripled that of the other teachers. Altogether, she sent 184 notes over the term of the project, but, more significantly, her notes were long, detailed pieces of writing. Highly personal, filled with story, rich in intimate details of Emmy's life, her writing was often punctuated with conventions chosen to convey strong feelings-- capital letters, punctuation marks, and interjections.

The first year. Emmy's first note was written all in capital letters. Using words like "glad" and "love ya," expressive and personal language permeated her writing most of the time. Emmy was the first teacher to really "open up," sharing details of her life, talking about what it meant to be a teacher in the project, and expressing enthusiasm for being online: "The students are enjoying *Maniac Magee*." "The banquet was a smash, but I left as quickly as I could because I had a PTA meeting to attend." "Several of the students have probably surpassed me in what they can do with the computer. I'm trying to keep up."

Early on, Emmy was frustrated with line noise but remained excited, said she was "getting the hang of" telecommunications, that it was "contagious." Throughout the project she expressed alternately her frustrations and successes with the technology ("I'm not able to get things online:" "I am slowly becoming an expert"), but no matter how badly things seemed to go for her, she would seek a way to make it valuable ("Everything will improve in good time"). For example, when she failed to meet a group deadline for editing the KTWP newsletter, she admitted defeat immediately and then tried to compensate with ideas and other projects, modifying what, for her students, had been an impossible time line.

Emmy wrote regularly and was an exceptionally strong participator. She sent 61 notes the first year, nearly twice as many as Sue or Bev, and she nearly always wrote personally, in a friendly voice ("Dear Friends"). She responded positively and warmly to what the others wrote ("You did a great job on the brochure") and engaged in genuine dialogue ("Have we created conferences that are extensions of school work?"). She made regular pleas to the others to write more often ("Will anyone be online during Christmas? I certainly hope so") and to get more involved ("Surely you all are going to join me in my wandering words"). She reported on her classroom, raised questions, and talked at length about KERA. Her stress was worked out online: "I write away my confusion."

Emmy's writing was filled with personal narrative. She reported on the everyday events and trivia of her life in rich detail ("left-over Chinese food from a date last night"), and she used humor, usually directed at herself ("Miss Paducah," "the Impish One,"

“Mischievous”), writing with a light-hearted tone (“Yes, it will send me over the edge, but Oh well. I’m there enough as it is.”)

No one else showed Emmy’s level of dedication to the project. The frequency and extent of her participation indicated the significance of KTWP to her personally and professionally. Such was also evidenced in her stories. She wrote about falling asleep with the computer in her lab. When her account was down for some reason, she found another one to use. Mere hours after the sudden death of her mother, Emmy was online with KTWP to talk about it (“My mother died this morning”). A few weeks later, rather than miss a planning meeting across the state in Eastern Kentucky, she brought her dad with her to the meeting.

After her mother’s death in the spring of the first year, Emmy’s participation changed. She described herself as “shell shocked” and “empty.” “Maybe I’ll get my head clear enough to put my thoughts together for more writing later.” During the initial period of mourning, she wrote much less and when she did she used the network as a safe place to work through her grief: “I just can’t seem to shake this feeling that I was less than I should have been for my mother.” The support of her KTWP colleagues mattered, “The personal notes have been a great help.”

The second year. During the first summer of the project, Emmy wrote often of her increased interest in technology: “I’ve been reading our Internet book. Quite delightful information. Great night time reading.” She hinted that she had a surprise for the other teachers, something she had done. “I’m really proud of myself!” Later she revealed her accomplishment and wrote about her “reasoning.” Emmy had noticed that

Mike, the graduate student in Arizona volunteering as an online poet to the project, was writing some wonderful travel adventures and posting them to "Journal" where they were largely ignored by the teachers busy with other topics. Emmy took it upon herself to create a new conference ("Well, I did it! I created a NEW conference"). "This will be a great place for us to share our travels. I loved [the story] of Bev's sleepless night looking for a hotel. . . Then I try to imagine Bud's adventure down the wrong street in New York. Seeing this conference continue throughout the year would be great. I'd love for my students to develop an interest in travel and geography." Emmy described her efforts to create the conference ("It was rather easy to do"), even though she admitted it was actually the "third or fourth attempt" before she succeeded: "After a short consultation with Kathy about Internet, KETNET, NYIT, braces, hardware, KERA, KETS, and the training I'm missing, I realized that even I could start a conference."

A few weeks later ("NEWS FLASH!!!!"), Emmy found herself assigned to a fourth grade classroom after having taught nothing but fifth grade. Like her mother's death in the spring, the change was sudden and surprising, and Emmy turned to the network for solace and support: "This is a note that I can't translate the doom and despair. I'm a fourth grade teacher! You might think that with the ! mark that I'm exclaiming excitement, thrill, delight, or even pleasure. I'm a fourth grade teacher! I'm not excited or thrilled or delighted or even pleased with the announcement. I'm a fourth grade teacher! What am I to do?"

Within hours she was engaged in a planning discussion about literature groups and age-appropriate books with Bev. "Here are my new suggestions for the lower level

of books. I'd love to keep *Maniac Magee* but that's a fifth grade book." Within days she had accepted her new "challenge," wondered "could there be a purpose in this change?" and decided she was "ready to take the fourth graders and do wonderful things with them." She wrote about her "nervous excitement" saying she had not "figured out where I'm getting my energy." During this period, Emmy wrote frequent notes, signing them "Your resident fourth grade teacher."

Within a month, her tone had changed somewhat as the realities of the day-to-day teaching and the pressures of her work requirements began to mount: "The test results have been the hot topic at our school. We are having so many committee and grade level meetings that I can't seem to get anything completed. Not to mention the parent/teacher conferences, student conferences, lesson planning, assessing student work, and the added responsibilities that I have had added to my job description by my principal." Time was a factor ("I could stay up the rest of the week and still not get caught up on the paper work." "I got behind on so much work I didn't know where to begin."), but for Emmy, teaching fourth grade-- a high pressure accountability grade-- in the midst of statewide reform began to overwhelm. "I think I have bitten off more than I can chew." "Now that I'm caught right on the battle field I'm facing shell shock and other calamities."

The solution for Emmy's challenges was often technology. Telecommunications was a priority for her: "I won't have the dishes done or the report cards completed, but I'll be able to compute without any trouble." Her enthusiasm for technological possibility grew. In November of 1993, she reported that her students "made the newspaper in California." During a time of serious fires in California, using Prodigy,

another online service, she and her students “connected with a fourth grade class in California.” She explained with pride: “My students were learning from the updated news on cable on CNN, Prodigy news updates, and from eyewitnesses [the California students]. . . I’ll try to post some of their writings. They wowed me!”

Emmy’s expertise and interest did not go unnoticed, and she became a liaison for other teachers in her school (“I also have many primary teachers that are interested in corresponding with other primary classes” “She attended a presentation that I did at our regional technology expo and came up to me afterward”), helping them get “hooked and soon.” Her writing was permeated with talk of technology and stories of her experiences, like the day she “had a child barfing all over a computer, monitor, and keyboard.” What to do? She learned to just “rinse it with water” and it worked. She sent supportive words to the other KTWP teachers, helping them learn how to maneuver: “I’ll also get a conference opened up for the special project this week.” As the teachers in KTWP prepared to make their first public presentation to the Kentucky Educational Technology Conference, Emmy took a leadership role. “We really need to do work on our presentation for KETC.”

By the mid-point of the second year, Emmy was posting as often as she did the first year (69 notes), but her notes became even longer: three or four or five pages single-spaced were not uncommon. Although her writing continued to be peppered with personal talk, everything personal seemed to relate to weightier professional issues. For example, talk of buying a new car (“I look real good in it”) became an analogy between sales people and the teachers’ role “as KTWP proliferation people” in the business of

selling technology to others. While reading *The Bridges of Madison County* she wrote about “an analogy between KTWP and the lover.” In a way, she was obsessed: “I’m constantly thinking about KTWP, the students, school stuff, and computers.” In the same paragraph she continued to say, “I have been doing a lot of thinking about children and their learning. Just when I thought I have made it as an ‘expert’ in children and learning I’m finding out there is so much more to consider.”

In January, Emmy (“a caged animal”) experienced “a brief stay in the hospital.” At her request, her dad “brought me my laptop,” and she quickly wrote a seven-page single-spaced note. In it, she addressed many issues (“thoughts to chew”), such as quality of student writing and future presentations about KTWP to other groups, and she raised questions: “What’s the reason we want to bring on the primary blocks?” “Are we setting up teachers and students for failure?” “Is writing to KTWP just a matter of posting their writing?”

For Emmy, the network served as an intellectual outlet. She wrote and wrote and then said, “I have more observations like that.” She filled the screen with her freely associated thoughts and explained, “I’m trying to shuffle this information.” She poured forth questions, thoughts, and concerns about her teaching and how it fit with KERA’s mandates and concluded, “I hope you are ready for more questions on assessment.”

Huge segments of the discourse the second year are a series of notes between Emmy and Carol, long, detailed discussions in which Carol answered Emmy’s many questions. “I really need some answers to how to meet everyone’s requirements of me.” “How many exit requirements are we going to have?” “Could we be placed on the

‘school in crisis’ status without facing the sanctions?” “Why are we worked overtime when I really need to be in the classroom with my students?” “I feel pulled in so many directions. I WANT ANSWERS!”

Educational reform was causing many Kentucky teachers to choose early retirement rather than change, and Emmy’s position as a fourth-grade teacher was difficult. “I keep reading about the turn-over rate for fourth grade,” she wrote. “Surely some of the burden has to be shared.” Struggles with the mandates kept Emmy at the keyboard. “We are still trying to get the writing portfolios scored, the math portfolios completed, and get ready for the other assessment.” She followed educational debates in the media and reported to the others. “I’m going to fax some anti-KERA materials. This might give you all a little idea of what the grass roots are saying in this part of the state.” Her lengthy notes seemed written as much as an outlet for her own thinking about KERA’s impact on her teaching as to inform or discuss. “I meant to drop a short line about testing and I ended up rattling.”

“I love this world of telecommunications,” Emmy wrote toward the end of the second year. Even when network difficulties threatened her complacency, Emmy continued to be a positive participant. She would speak up about her feelings and then discuss the complexities of the situation until she seemed satisfied to continue. For example, “I am very much disgusted with the writings that have taken place in the poetry section,” Emmy wrote after some of her students had downloaded poems written by high school students in the project. As she saw it, “Fourth grade students reading notes signed ‘your lesbian lover’ is inappropriate.” The situation was complex, Emmy felt, and

conference guidelines had been violated. “There are issues here other than censorship and open-mindedness. I feel that my rights and the rights of my students have been ignored. Aren’t we responsible to be sensitive to others?”

One of the last notes from Emmy as the second year ended was written from a Bob Evans restaurant on her “way home from a PRISM Task Development Team meeting in Frankfort.” The level of her own professional development was evident at this point in the project and she had become highly active statewide. In the name of telecommunications, she was traveling, talking, and teaming with others. As the school year ended, Emmy headed off for another intensive PRISM meeting (two weeks) and a three-day KTWP writing workshop. According to her, she was “not looking forward to being away from home for so long.” Her summer was a series of such travels. By fall, she was “tired of being away from home and excited about the start of the new year.” In her trademark style, she reported, “The suitcases are finally where they belong. Deep in the closet until mid October. I might have to check into a hotel in a week or so. I don’t want to forget the very important skill of checking in!”

The third year. “So, we are in the third year of KTWP. Gee!” Emmy began the last year of the project with a bang, telling her colleagues to “get in school so your kids can write.” She questioned the value of staff development and wrote of her readiness to start a new year (“I’m more determined than ever to do my part to make sure this district stays afloat.”). “I have survived the first week of school-- three days of staff development and two days of teaching. I’m still unsure of what my class assignment will be. It appears that our school has suddenly experienced an increase in student population. So

my class of fourth and fifth graders may or not be. Unfortunately, I won't know for sure for at least a week."

Once again, Emmy faced changes in her classroom, teaching a split fourth and fifth grade for the first time ("a lot of time is spent in planning;" "Having returning students is a blessing." "I love my job and wake up looking forward to getting to school.") She wrote a total of fifty-four notes during the third year; nine long notes were posted in rapid succession as the school year started ("Oh, I just love the beginning of school tasks").

"What changes are some of you having?" Emmy asked the other teachers. For Emmy, change and growth were inevitable. At this point too, she shared feelings about her father's changes and remarriage ("My daddy has been full of surprises. His personality has changed so much."). The project underwent an important change as Robin Lambert was hired from Alabama to serve as the new director. She visited Emmy's class first and was told by the proud teacher, "You'll just love the area and my kids. I don't know how I manage to keep getting some of the best classes."

Emmy's notes were still peppered with humor and some personal talk, but for the most part she had become engrossed in teaching and educational issues. Her student introductions were posted quickly. Emmy talked of curriculum and reported "the kids are loving Jack Prelutsky." "My students have been spending a lot of time writing historical fiction." She asked about getting some literature discussion groups started. She took an active role planning the Kentucky author's project (I'd love to have a writer that writes about Kentucky history/geography."). She wrote to everyone by name, responding

directly to their comments, and raised many relevant issues: site-based decision making, violence at school, class size, and politics, are a few.

Late one November night, Emmy sent a note prefaced: "Attention All this is not a fictional piece!" She told the story of a ten-year-old student who brought a gun to school in order to shoot another student. She'd been through a day of police and parent conferences and was agitated. The case continued through a series of notes, until she finally announced that she was "taking Monday off" to go to a technology training in Tennessee. "It is hard for me to say that I don't have what that kid needs."

Mostly, throughout the third year of the project, Emmy's notes were rich with talk about technology ("It's just like driving a car"), and much of her online work was help offered to others. For example, she sent directions to all on how to read your own notes by sending them to yourself. Once again she took the lead in planning a KETC presentation. "We could be of much assistance by presenting some of the innovative things we are doing in our classroom." "English teachers still appear to be very shy about technology. THEY NEED US!" "We are all very fortunate to have been allowed to get a step up on what is happening. We shouldn't forget where we were just a few years ago."

Emmy was busy and professional. Her name was on the approved list as an inservice provider in the state, she was contacted by a "Chapter 1 bulletin board system out of Indianapolis to post some articles about my experience with KTWP," she helped design a weather telecommunications project with another network ("I might say that it was because of my direct influence that project took on an across-the-curriculum strategy"), and she had numerous "opportunities to share my experience and 'expertise'"

with other colleagues across the state.” At the local level, she participated on two technology committees, chaired her school’s technology committee, and served as the technology coordinator for her building.

She took an active interest in training other teachers. “After our region’s recent Technology Fair, I realize there is a big need for good presenters in the area of teachers actually using technology in their classrooms.” While serving as a consultant for a special extended school service grant, she reported, “It was during a planning session that I stumbled across the lack of teacher experience with technology and writing. I mentioned about student ownership, authentic audience, and purposeful writing experiences. All the teachers were extremely interested in learning more about it and then to include this in our curriculum.”

By the end of the project, Emmy was looking forward to the end of the year and the last day. She wrote long, thoughtful notes about the project and discussed her plans for next year (move to KETNET). “I’m looking forward to a weather project that will link Kentucky schools by more than just weather observations.”

Epilogue. According to Emmy, “My experiences with telecommunications have been life changing. I have learned about my state, my students, educational practices, and even myself.” Three years after the start of the project, Emmy continued to teach fourth grade at McNabb Elementary, but she had taken on larger responsibilities too. She had become a fourth-grade leader and expert on portfolio assessment and student writing projects, often consulted about portfolio assessment, student writing, and technology. In addition to serving as her school’s technology coordinator, she had become a state

representative for PRISM and KETNET. She traveled the Kentucky presenting workshops at the Kentucky Educational Technology Conference and at state sites of the National Writing Project. She published "Hurricane KERA," in *The Nearness of You: Students & Teachers Writing On-line* (Edgar & Wood, 1996) in which she stated she had "weathered the hurricane" and now "wanted to start preparing for the next storm."

Bev

Over the three-year period, Bev sent a total of 86 notes, less than half the number sent by Emmy and less than a fourth of the number sent by Sue. And yet, unlike other teachers on the network, Bev's participation never wavered, as she sent approximately the same number of notes each year, almost like clockwork. Also unlike the other teachers, Bev talked primarily from a professional rather than a personal stance. Although she sent the fewest notes, her notes were lengthy, developed and detailed, written report-like, and filled with unique features: a personal warmth, a keen sense of her audience, and a dedication to professionalism. Regularly, Bev sat before her computer at home, writing consistently, considering the student perspective, and telling lots of classroom and student stories. She took her work in the classroom as well as online seriously, and she asked hard questions and raised important issues.

The first year. Bev was enthusiastic about the project from the beginning, and quickly involved her students. In her first note posted to "Journal" ("Hello from Covington!"). Bev used the pronoun "we" and signed it "Holmes Jr. High." From the outset, Bev considered her participation in KTWP to be team-like. "We finally got our modem and are on-line." Although the technology was brand new to Bev, and her first

note was very short (233 characters), written all in capital letters, and ended with a faulty send command, she showed immediate sensitivity, audience awareness, and civility: “We are having fun reading everyone’s messages.” Also, instantaneously from the beginning, Bev and her students assumed project responsibilities and made promises to participate: “We will try to open a conference soon.”

Active participants from her beginning, Bev and her students shared enthusiasm for the project. The second note posted from Covington was not sent from Bev, but from her student, Tyana, “the newsletter editor here at Holmes Jr. High School.” In it, Bev’s students responded to the Saint Peters and Paul newsletter request, discussed deadlines (“the deadline is OK”), and assumed immediate ownership and responsibility. (“I would like to hear from Bunny, Jonathan, and the others that were in our group. . . . I will have everything done by Friday.”)

Early in the project, teachers in KTWP attended the annual conference of the National Council of Teachers of English held in Louisville that year, and they had the chance to meet face-to-face after writing to each other online. Such opportunity seeded a professional collegiality which brought Emmy and Bev into the forefront of teacher talk on “Journal.” In her third note, Bev, “enthused about my trip to Louisville,” responded to Emmy’s enthusiasm. Both got author’s autographs and were excited to meet the others, and Bev’s words about Richard Peck, Virginia Hamilton, and Arnold Adoff were directed to Emmy specifically. Of all the teachers, Bev was the one most likely to nudge someone who had been silent too long, asking, for example, “Sue-- are you out there somewhere?????”

Even as Bev began to write herself, speaking in her own voice to her colleagues on the teacher-only network (“Dear Fellow KTWPers”), the first word of her notes was likely to be “We.” She reported on how grant money was being used and made every effort to apply all outside resources to the students (“We now own a fax machine for our classroom.”). She wrote in response to Emmy’s kids, reporting that she used their writing for another project, and she detailed her students’ activities: “We have been very busy here with a candy sale to benefit the Covington Community Center. . . The kids each got \$10 or \$15 to go shopping to buy toys that will be distributed by the center. We had fun wrapping the toys and 6th period got to deliver everything to the center.”

Bev’s notes, of all the teachers, were richest with descriptions of her class and her students. For example, shortly after the fax machine was added to the classroom, Bev wrote, “While my class was discussing a chapter in *The Outsiders* we got a fax.” Jonathan, a student at home sick (“I think I might have the flu”) faxed three pages of his homework. On another day, when the class participated in a community project by helping to build a house for the family of a class member, the student took “the video camera home to tape her family talking about the house and Habitat.” Evidenced throughout Bev’s classroom stories, participation in KTWP seemed to matter mightily to her students:

I’m glad to see some responses to B’s and M’s writing. Both girls had some trouble right before the Christmas holidays and are a constant worry to me. M was having problems at home and school. She had a particularly bad day and told me she didn’t want to live. She was crying and just kept repeating that she wanted to kill herself. I was so concerned about her and had the school psychologist and counselor talk to her. She seemed better the next day. But then B was taken to the hospital that day because she was high on drugs and

threatening to kill herself. M was in school this week, Monday through Wednesday, but has been absent Thursday and today. She has not seen her responses yet. B is presently in day treatment and will not be back at school for awhile. However, the counselor went to see her and B told her about KTWP and that as soon as she gets back she wants to write to everyone that wrote her. The counselor told me that she kept talking about KTWP.

Bev's students mattered to her. Throughout the three years of the project, she wrote often of her students, speaking of them almost as family: "Two of my students Tico and Tonya lost their mother on Tuesday. She had heart problems and died suddenly. There is no father around and they probably will go live with an aunt in another school district. We hate to lose them." And most often her notes detailed their suspensions, fighting, drugs, and other problems:

M. S. is in the process of getting expelled from school. She got in another fight and the Dean found a knife on her. She has received some personal letters from kids at Wheelwright and I really appreciate them writing to her. She just had too many problems that we could not deal with at school. She was never a problem in my class and I know that her limited involvement with KTWP was good for her. She has the home address of Jimmi Lou and she may still write to her on her own. I'm keeping my fingers crossed with Bridgett. She seems to be trying real hard lately and has been in school two weeks straight-- a record for her.

In Bev's reports, the traditional roles of students and teacher merged and blended. She admitted she learned from them as she leaned on their expertise: "Whenever I can't figure out all this technology stuff, I turn to the students for help and they usually can tell me what I am doing wrong." Under her mentoring, her students tackled several community service projects and literacy projects. She transformed her classroom into a workshop environment ("I have been using Atwell's reading and writing workshop." "I have encouraged other teachers in my school to read it because it changed my life as a

teacher”), putting the responsibility and ownership on student shoulders. At the same time she continued to monitor their learning (“Students still have trouble with peer editing and coming up with ideas for writing”).

Like Emmy, Bev used “Journal” to talk about her problems and concerns, although Bev limited her talk to professional issues. In terms of technology, specifically software incompatibility, she wrote in response to another teacher, “You are not the only frustrated person in Kentucky.” Like all teachers, she said, “My biggest problem is to find the time to do all that I want to and need to do.” “There seems to always be something that demands my time and energy.” And feeling isolated and overwhelmed, she wrote, “I believe I am the only teacher in KTWP who sees her students for 55 minutes a day. Trying to do reading workshop, writing workshop, reading aloud a novel, dialogue journals, conferences, mini-lessons, KTWP, book projects, research projects, and community service projects. We run out of time.”

Bev approached all her problems with an optimistic sense of challenge, seeking solutions instead of sympathy. When buried by the reading and by her efforts to integrate, she wrote about how she involved kids (“I have one student who comes in early everyday to capture notes and I want to involve more kids”), and she used the network to think about strategies for handling massive notes-- asking her colleagues, “How do all of you manage to keep up with the volume of notes that are written?” Later she wrote, “I just came up with an idea. It’s great I think. I will put together duplicate notebooks of the notes in each conference and students can check them out for the night.” Another time she mused, “I’m thinking of restructuring my classroom time.”

Bev's notes reported on her classroom, identified problems, and grappled for solutions. Her pleasure seemed to come from the process. "I know I seem to be frustrated all the time but the frustration is good because it is making me think. In fact, I spend a great deal of time just 'thinking.' I am constantly analyzing everything, trying to improve it or just trying to figure it out." In a personal aside, she confided, "I sometimes (probably all the time) drive my husband crazy because I am always bouncing ideas off him and when I'm not boring him to tears, I'm lost in my own thoughts over some issue at school." Generously, she told her KTWP colleagues, "I'm willing to bet that all of us involved with KTWP are thinking all the time." Half-way through the first year, she wrote, "I'll be better at this next year because of the frustration and thinking that went into this year."

Bev's "thinking" was made visible in the work she did with her students. The network gave her the opportunity to try something new with her students, not as an add-on, but as an integral part of the learning, and talk of her classroom and planning was integral to all Bev's notes. "I am trying to combine what I normally do in the classroom with telecommunications and I am in the process of trying to find the best way to make it all work for me and my situation." "I am trying not to see everything as separate activities." At the same time she admitted the network gave her an opportunity to plan and think: "Teachers, in general, feel very isolated and it's nice to have someone listen, support, and care about what is going on in our classrooms."

Evidence of Bev's "thinking all the time" is found in almost every note. She reported on her efforts to use the computer for a reading journal: she told a story about a

student who wanted privacy and so refused to write online; and throughout many other stories, she asked good questions. “How do we get students to respond to the writing of others? As teachers do we need to structure this more?”

Bev demonstrated a dedication to KTWP and a commitment to share her thinking with the other teachers. For example, when she used some of her grant money to participate in a private correspondence with Janice Lowe, an author from Teachers & Writers, she dutifully reported, “Her first note to the students was wonderful.” “I’ll keep you all informed about how it is going.” When she took a group of kids to Dayton, Ohio, to meet the popular author Gary Paulsen, she wrote, “Emmy, I got *Hatchet* and *The River* autographed for you.” And in all cases, her first commitment was to the students: “We spent \$250 on books for the classroom. The students selected the books.”

Bev was kind to the others; her notes were rife with personal references and compliments: “Emmy, I think it’s great the way you respond to so many kids on KTWP. I don’t know how you find the time, but keep it up.” “Mike, Roy read your response to his story on Thinkers and Writers and was beaming. He came up to me and said, ‘He said I had maturity in my writing.’”

Bev participated consistently throughout the first year. When circumstances kept her off-line for a time, she told her colleagues, “It feels great to be back online after about two weeks off. I missed communicating with you all.” She wrote at length discussing the literature group talks, preparing for state testing, reading Lucy Calkins, questioning everything, and telling great stories. One Saturday during her class’s Habitat for Humanity project, she related, “We had one casualty-- my finger, now turning black and

blue as a result of getting hit with a hammer.” Her notes were about teaching: “I’m writing this in class while students are working on their research papers. I’m modeling.”

In February of the first year, Bev conducted her first inservice about KTWP, reporting that it “went well.” “They genuinely seemed interested in what we are doing. One teacher stayed an extra half hour asking me questions.” About that same time, she “had a brainstorm” while she watched an inservice conducted in her computer lab for new users of the Macintosh. “The teacher giving the inservice was running around answering questions and assisting teachers. . . . What if we had another inservice and had my students there to assist the teachers?”

Bev assessed constantly, noting, “I see kids getting involved with the projects we are doing and I see their self-confidence and self-esteem improve daily,” and also acknowledging, “Their background knowledge is not the only one expanding, mine is growing by leaps and bounds too because of my involvement with this project.” Bev “put together a short video” about the project for a Chapter I presentation in April (“A student and I spent hours putting a narration and music on the video.”) She told the KTWP teachers, “Now I’m an expert on audio dubbing.”

In matter-of-fact language, Bev explained, “My students and I will be extremely busy now until the end of the year.” And by the end of the year she reflected, “I feel that I tried to do too much.” Mostly, she listed the benefits of the project, “It’s been a real learning experience for me.” “Writing to all of you has been wonderful.” And she demonstrated, once again, a participation bounded by reciprocity: “I love reading notes from all of you.”

The second year. Unlike the other KTWP teachers whose participation the second year doubled and tripled, Bev's participation remained consistent. The first year, she sent 30 notes; the second year she sent 33 (compared to Emmy's 69 and Sue's 73). As in the first year, she wrote regularly, professionally, and richly. While her focus the first year was on her students, it seemed to broaden the second year as she assumed a more active leadership role in the project and in her profession.

After some leadership difficulties with the grant itself, Bev wrote a long note to her colleagues on KTWP ("It's time we start talking as a group about what we need to do to get some of these problems worked out and truly become a community") in which she asked "each teacher involved with KTWP" "to write each week." She took her own advice.

When Bev and another teacher from the project drove to Louisville to attend a seminar with Lucy Calkins, Bev was the one to share the experience with the other KTWP teachers ("She spoke about writing notebooks and the 'new' writing workshop"). In the fall, Bev and the teachers from Lexington traveled to Pittsburgh to attend NCTE. "I wish you all could have been there," she wrote, sharing the experiences online with the teachers who didn't attend, telling them, "My favorite session was with S. E. Hinton, author of *The Outsiders*. She was so funny that I found myself furiously taking notes to share with my students."

Bev took a strong leadership role in organizing and managing online literature groups, participating in the project ("We are using nine different books here"), reflecting

on the process ("Using lit groups has been more difficult for me than when my students are reading individually. Trying to keep up with the groups and gathering the notes for each group so they have them on hand when they meet takes time and organization of my part"), and moderating the discussion of all the other sites. Her participation and leadership was an invitation to her colleagues. In her role as moderator of the literature groups, she urged everyone's participation and reflection:

I know you are all busy, but to finish up the lit groups, I would appreciate it if you all could write a final reflection on how you think the lit groups worked or didn't work. I think we need to do this in order to help us in the spring when we try this again. I think the idea is good and we learned from this first attempt. What did we learn? How did it go at the individual sites? Is there a better way to organize the groups? How do you think the moderating went? I have some ideas, but I want to hear from you. No rush. Whenever you find the time, send a note to Lit Groups. Thanks.

Bev herself modeled the kind of thinking she requested of her colleagues saying, "There is so much to think about I don't know where to begin." She wrote often, raising issues and taking a stand on substantial topics such as what to do when peer response is inappropriate ("Students should not necessarily get critiqued unless they ask for it"). She evaluated her students efforts ("I have a group of kids who are really hooked on KTWP") and she reported on their progress. "Students can write to KTWP during writing workshop if they choose." "I have at least one class period devoted entirely to KTWP." "Kids check out the Powerbook because they want to write to KTWP." "Kids want the computer at home to write."

Professional development was evident throughout Bev's notes. For example, when she had technical problems ("I can't get through to Internet") she sought help

("Two men from NKU are coming to my class tomorrow to help me"). On another occasion she told about two professors visiting her. "They wanted to 'see' telecommunications and how KERA was being used in local schools. They were both impressed with the notebooks and the ease at which the kids used the computers and technology."

During the second year, Bev presented at the State and Federal Programs Conference for Chapter I "emphasizing telecommunications and KTWP." Even as her own exposure broadened, even as her expertise became more widely recognized, her focus remained on the students in her care. When presenting, she took students "for moral support" explaining that "each will talk." When she attended the International Reading Association conference in Toronto, she met Gary Paulsen and reported, "I told him about Antonio (my student)." And when she took some students to present at the Kentucky Educational Technology Conference she mused, "I wish we had more opportunities for the kids to get together." Her students remained highly active participants throughout the online conferences.

When the testing results were released for the previous year, Bev reported that her students had done very well. "I'm really proud of them. I believe their involvement in KTWP was the reason they did better than expected." At the grand opening of a new technology center in her district, Bev's students served as hosts ("I got a lot of compliments about them.")

In the spring, Bev took on an added class, a "computer class" for middle school students ("I would like to have them telecommunicating with another extended school

class.”) And in spite of all her busyness, she was enthusiastic when she announced, “Everything is finally clicking. I feel pretty good.”

About the time she found out that her students did exceptionally well in the state testing (“better than last year”), she had the rug pulled out from under her in terms of her program. “The Chapter I program will change next year.” Bev “decided to take some action,” and she “wrote my concerns to my principal along with some options for my program next year. I used last year’s KIRIS results to support my position. I met with him on Tuesday and we had a long discussion. I believe he will leave my class the way it is for next year. . . He was glad that I spoke up and took the time to write up my concerns.”

The third year. Bev returned to school from a two-week Hawaiian vacation and claimed she was “NOT ready” for a new year. Although her participation dropped somewhat the third year, and although she resumed her pattern of infrequent but consistent reporting, she wrote long, detailed notes raising complex issues about discipline and student referrals, sharing ideas for authors (“George Ella Lyon would be a good choice”), discussing class size, and even complaining (“inserviced and professionally developed to death”).

As in the first and second years, evidence of Bev’s growth as a teacher, a high level of professional as opposed to personal discourse, permeated her notes. Throughout the final year, Bev reported that she was continuing to grow as a writer. Deciding to submit the story of “at risk kids and telecommunications” to Teachers & Writers for publication in their book, she said, “I now know how the kids feel when we want them to

write, do peer editing, or post writing for others to read.” Later she told the KTWP teachers that she was now “keeping a writer’s notebook” because “I have ideas at the weirdest times, like when I’m brushing my teeth.” Later she tried keeping a writing notebook with her students. (“I’m not sure what will happen but we’ll give it a try.”)

Early in the third year, in context of working on her chapter for the book, Bev told how in the process she was rereading and reflecting over the first two years: “A lot of positive things went on the last couple of years. I don’t think we realize the success we had until we take the time to go back and read some of the student notes.”

Bev was “written up in *Kentucky Teacher*,” the state newsletter for Kentucky educators, telling the others, “There is a little blurb about my Chapter 1 students and online writing.” She traveled to Indianapolis for two days of training on using the Macintosh (“Of course this is the part of technology I don’t like, the technical problems”) because she hoped “something will sink in that will be useful.” Afterward, she told her colleagues, “I think I can troubleshoot some of the problems that occur.” Routinely, she told of another occasion where her expertise was recognized on her terms in relation to the accomplishments of her students: “I did a presentation for our faculty about using telecommunications in the classroom. I put up on the overhead projector lots of writing.”

The superintendent for public instruction visited Bev’s classroom: “He seemed genuinely interested in what the kids were doing on the computers and knelt down to talk to some of them for a few minutes.” Seeking every opportunity to promote the good work of students, Bev “took the initiative and sent in an application for the Student Showcase for the Technology Conference.” Afterward, she wrote to thank the students

who participated: "All the students worked very hard and did an excellent job of representing KTWP." As for her own participation, she confided, "I was exhausted when I got home but I know it was worth the effort."

As the teachers discussed an online author's project and wondered about books, Bev was busy reading the books: "I checked a couple of books out of the library." "I've been reading a couple of Jenny Davis' books." When her peers were silent for a while, Bev invited them back to the conversation. "Haven't heard much from you guys." She responded directly and richly to the work of her colleagues, sharing their students' work with hers: "We talked about how she had all the elements of a good scary story in it."

As in the earlier years, Bev also continued to share reports from her school community: a teacher who lost her son over the weekend, another child killed by a semi-trailer truck. For Bev, "these tragedies really put everything into perspective." Bev continued to write from a professional point-of-view, perhaps because her time was limited: "I just can't find the time to try other networks out even though I would like to."

In February, Bev reported rather matter-of-fact: "Things have changed a little here. I'm now working in the Tech Center one period a day. I had to give up my second period class to another teacher for the rest of the year which was not easy because it was my best class." This sudden and unwelcome change resulted from a shift in administration. "Our new principal made the changes." For a teacher who shared decision-making so readily with students, Bev had to swallow a difficult edict, and yet her ability to do so was as steady as always: "I miss my class, but hopefully it will all work out."

By the end of the year, Bev's middle school Chapter I program was eliminated entirely. She had "been on an emotional roller coaster" and was notified that she would be moved to elementary school or "'pinked slipped' by the end of the month." Once the decision was made, she began planning for the move to elementary-level teaching. "I'm still figuring out how to do it." "I'm trying to be optimistic about the whole thing but it's hard." In classic Bev fashion she confided, "I keep telling myself that change is good." She sent her thoughts about the year ahead and the next year too. She hoped to continue the telecommunications project even though the grant period was over. She was getting a phone line in her new classroom.

Epilogue. In her end of the year report, Bev said, "Telecommunications changed my teaching because I now see classroom writing as more than just fiction writing. I also see the power of using other students' writing for modeling mini-lessons. Communicating with other teachers was a personal benefit to me because sometimes we never get out of our own classrooms." Three years after the start of the project, Bev, now regarded as an expert by her district, had become the technology and reading resource teacher for the largest elementary school. She traveled to the National Council Teachers of English Conference in San Diego and single-handedly presented her experiences with the Kentucky Telecommunications Writing Project in a ninety-minute session. She published two chapters in *The Nearness of You: Students and Teachers Writing On-line* (Edgar & Wood, 1996): "Writing Conferences and My Chapter 1 Students" and "Dear Jenny," the story of the author's project and its impact on her students. "It's not magic," she said in an interview: "It's persistence. I can't do stuff I don't believe in."

Sue

Sue wrote 128 notes over the three year period, and as evidenced on the pie chart was a frequent contributor to the network. Such numbers, however, are deceptive. Analysis of Sue's participation, especially compared to Emmy and Bev, revealed a very different experience. While it is true that Sue posted often, her notes were exceptionally brief. Unlike Emmy's seven-page freewritings or Bev's weekly reports detailing her classroom, Sue's notes were often just a line or two. On the occasions they were longer, she posted them separated by topic, often sending two or three separate notes in an evening. Also, because she experienced many technical problems, sometimes she sent repeat notes, uncertain they had arrived the first time. Throughout the project, Sue's notes appeared with strange characters, letters missing, and faulty margins.

The first year. From the very first note Sue sent, she experienced problems with the network. Her first note, an expression of frustration with her account, was cut off in mid-sentence ("I'm running out of time unless"). Her first three notes, sent in rapid succession, addressed three problems respectively: connecting, writing, and opening conferences. Nine days later, she succeeded in sending her first official note of any length, eight lines with words missing throughout, a brief report on her activities ("We are doing The World Game at School in the morning. You'd surely Otherwise, most any time would be ok").

Like Bev's students, Sue's students took an active role in posting their own writing. Early on they posted mid-term reflections about their work, saying, "We would

appreciate comments and critiques on them as a batch or, more helpful, individually.”

They did not address the note to a particular audience, however, and they offered no response to anyone else. Not surprisingly, they received no comments or critiques.

Sue did not participate for a long time, and Bud, the project director, reported that her printer was not working; somehow this effected her ability to “read all that has been written.” Two months later Sue wrote again, sending a note (“Dear KTWP Colleagues”) about problems: “This has been a very over-loaded season for The Brown School component. Technology has sabotaged us Nov./Dec, bureaucracy in Jan. And we seem to have little time daily for e-mailing.” Making room for KTWP in her curriculum was a challenge, and she hoped to “try to get kids on line outside of classtime.” She admitted she had not captured “all of the notes you have sent” and therefore “may not respond.” Over half of her note was addressed to Bud, in which she made promises about participation (“I will revisit the Big League writers’ conference notion with the interested kids”) and asked for information (“Please let us know ASAP about conference details”).

Toward the end of January, 1993, Sue posted “1992 KTWP Reflection,” a formal essay in which she dedicated herself to continued involvement in the project: “I stand now with KTWP: convinced of the goal, committed to the process, honored by my inclusion, yet overwhelmed by the demands!” Demands on Sue (from outside the KTWP project) were many. “As a practitioner of the Nine Common Principles of the Coalition of Essential Schools and a consultant for this work, member of two different teaching teams, a teacher of composition in addition to the two teamed courses, and a KTWP colleague, I am overwhelmed by the tugs at my time and energy.” She stated, “I am

continuously frustrated by the technology and its oftentimes senility in my building and district.” In spite of her struggles to master the technology and in spite of her concern that it was “hard to write and be committed to folks we don’t know well,” she decided “that it can all be done.”

Sue’s good intentions were realized the following day when “back in the loop” she wrote “a stream-of-consciousness attempt to problem solve.” She talked about her concern “that my students will do the ego-centric, adolescent thing and write to be read rather than write about what they’ve read.” She thanked Bev for asking about her whereabouts and she signed the note, “Fondly.” For a time, Sue posted notes once a week. She thanked everyone “for the positive feedback for the kids’ work.” She pledged, “Next week we will commit ourselves to responding to peers’ writings and notes. . .more or less.”

The following week she came online to say, “Greetings from the bottom of the well-- the place I’m having to dip to get my energy and wherewithal.” And with a touch of humor (“Why doesn’t anyone ever ask to shadow a teacher?? Whimps!!”), Sue reported on the week and her students (“stretched to the max, testy over-tested”). She criticized the state-mandated portfolio (“Is this anyway to teach them to appreciate the process of learning?”), and she thanked her KTWP colleagues for their participation (“I appreciate all the personal responses to Brown kids about their projects. I think checking for messages each day and actually getting some have helped my kiddos survive.”).

The following week, Sue reported she was “left with a residual stress headache and a portfolio twitch on my left cheek.” She referred to telecommunications as a

“COLD medium” and discussed her feelings of inadequacy (“It’s the obsessive-compulsive in me that never quite feels like she has done enough right enough.”), and then concluded with an apology, “Sorry about the intellectual meanderings tonight.” Shortly afterward, the entire group met in Lexington for a face-to-face meeting, and Sue wrote, “I feel more confident in how to engage my students in KTWP work.”

Mostly Sue’s writing was a monologue, talk about her class and her school, the plays they’d seen, the special projects, and the field trips, little of which pertained to the KTWP network. She wrote of her professional life as something slightly connected to KTWP. For example, she “presented a session at the Regional Writing Workshop for Western Kentucky focused on ‘change from within the system.’” As she explained to her KTWP teachers, “Needless to say, I mentioned KTWP as an example of networking.”

By the end of the first year, Sue noted to her KTWP colleagues, “If the powers that be expect us to demonstrate beyond a doubt that telecommunications is the be-all and end-all for writing development, they’ll probably be disappointed.”

The second year. Sue’s participation and her apparent feelings about the project seemed to swing in a fairly wide arc. She moved from enthusiasm to disinterest, positive thinking to almost anger, active participation to silence, and then moved back again. For example, during the summer of 1993, she wrote that she would be unable to attend a KTWP meeting at Hindman Settlement School in Eastern Kentucky. Then she wrote a series of brief notes during a three day period, accusing, “I assumed it was off since there was no info or planning.” “I haven’t received any mail about the Hindman meeting.” “What’s going on??” Then after she attended the meeting, she wrote, “A few things

came into better focus for me. Perhaps the grant ought to underwrite someone's salary so a permanent sub could be hired while a teacher is compiling data and writing."

One morning in the fall of the second year, Sue wrote, "I don't know if it's the technology, the snafus, the overload or PMS, but I feel like I'm living on the edge these days." She then reported the high school KIRIS scores had dropped. Bev's students scored well on the state testing, and so did Emmy's, but Sue's did not. Sue wrote of her disappointment parenthetically, "I wish everyone (ME included) could feel as good about the kids' showing."

In October, Sue had a phone line installed in her room ("I'm a much happier camper"). Sue and her students participated in the literature discussion groups and she wrote somewhat dispiritedly about the experience: "Between kids starting books at different times, having no access to working labs where all can work at the same time, and some kids not liking the books enough to do more than grouse-- it's been a challenge." Later she ended the same note with another parenthetical comment: "I must admit that this has probably taken 2-3 times the amount of prep time that I usually spend on such a project. Am I alone?"

Also in the fall of the second year, Sue wrote to her colleagues, "I'm more convinced that what we're doing here might be more about 'community' than technology. . . . Perhaps what we are exposing kids to is the future of communities-- the places you share, get support, learn, gossip, get validated, learn trust. It's working for us, I think." Again and again she wrote defensively of her busyness: "Gawd, I'm overwhelmed with the STUFF of teaching: workshops, grades, late papers, another workshop presentation,

restructuring, computers.” After pouring forth, she would say, “Whew, there. I feel better.”

Positive moments in Sue’s participation were usually juxtaposed with negative. The language of Sue’s notes remained somewhat formal and served to voice subtle complaints, usually about the failure of others to support her class: “The volume of work on this network has been wonderful the last couple of weeks. We probably need to consider asking some of the more serious writers of poetry and fiction if they want to become part of the writing circles so they can be assured of responses to their work.” Other times Sue’s words were somewhat self-righteous, almost rude, as she continued to complain that her students were “actually getting some responses.” In spite of her repeated notes on that topic, she never raised questions, or discussed the issue of why her students received inadequate response. Instead she resorted to sarcasm, not sure her modem was working, since “I don’t get responses.”

Sue was full of good intentions, but the undercurrent was usually somewhat negative (“I’m sending the essays by the end of the week. Maybe.”). She had a proposal accepted to present at the Kentucky Council of Teachers of English, hosted “40 guests in our classrooms as part of the Coalition of Essential Schools,” and adopted a puppy, all positive. Then in the fall, when KTWP teachers traveled to Pittsburgh for NCTE, Sue stayed home, writing, “NCTE was always real stimulating for me too. I never had the time to try out all the great ideas I got there, though.”

A moment of warmth came from Sue when she wrote congratulating Jane on her new daughter-in-law, “Thank you, above all, for sharing it with us. Deborah Tannen is

affirmed once again, in a new dimension, as we establish community on-line.” Days later she wrote a general note expressing “disappointment that we all weren’t committed at the same level.”

Sue made several efforts to voice concerns about project leadership, using polite language and offering suggestions (“Perhaps responsibility for facilitating can be rotated.” “I feel somewhat uncomfortable with this group having a captain when we are engaged in learned shared leadership.”) With time to reflect over the winter holidays, Sue began to take a more active role in voicing her visions of network administration: “Every meeting will have a preplanned shared agenda: no group decisions will be made unless every person involved is present or whose say is represented; all meetings will begin on time; real issues will be presented forthright rather than couched in jokes.” She expressed forthright demands at the end of many notes addressed to Bud, critical of his leadership: “I’m waiting.” “Please send me this info.” “Did you get?” “Will I get some specifics in the letter you said is in the mail?”

Logistics and leadership became Sue’s topics: who was responsible for making the agenda, who should be making reservations, who was handling credit applications, and as Bud handed much of the leadership over, Sue’s participation accelerated (“Looks like I am facilitating the next meeting”). She initiated on-line team-building activities, requesting teachers to write about “hot buttons,” “your team strengths and weakness.” “I’ll go first,” she wrote. “I get crazy when. . . .”

It was at this point in Sue’s participation that she also became more philosophical. “I worry about student involvement online sometimes,” she wrote gently, and she

explained how she involved her students. Her method of student participation was purely invitational: "I have 8-9 kids interested in doing the bird project. Let's hope!" "The info the kids choose to share with their pen pals might be imbedded in a more personal letter." And then shortly afterward, "My guys are writing like crazy these days, and we are trying hard NOT to be part of the 'community of the deaf'."

As Sue's participation peeked, she engaged in some prodding of the theories and issues: "I'm wondering what we mean by 'writing' when we talk about improving it via telecommunications." She tried to connect her curriculum with others, asking, "Should we try to do some shared readings?" She got involved in an on-line issue with students, "decided to use the incident as an opportunity," and reiterated her desire to "find ways to accommodate the needs of real diverse audience and community of writers."

On the occasion of a snow day, Sue wrote, "Now I can perhaps get caught up on my *English Journal* and *Ed Leadership* readings-- about 6 months worth!" As the snow lingered and her writing lengthened, she sent out notes to three different teachers seeking curriculum connections in three areas: birds, literature, and reform. Later she confided, "You all have helped save my sanity and, above all, kept my mind from atrophying and my conscience from getting overloaded with guilt because I haven't done anything constructive. We've all built community."

In the spring, Sue's notes returned to one liners, one topic notes. She had little to say and she spoke without enthusiasm. She seemed busy with many projects. "Back from Newport, RI with Seymour Sarason and his texts on why ed reform is doomed to failure. The guy's got some good points," she said without elaboration.

The third year. As the final year began, Sue was the last teacher to appear online. No friendly greeting, no polite chat, her first note of the new school year was written as a memo ("To: KTWP") abruptly beginning, "I feel like I'm digging out of a hole, looking for sunlight and fresh air! Between the usual start-up demands, a debilitated lab, the high school restructuring initiative grant and allergies run amok, I'm behind on KTWP. Friday I down loaded over 80 pages!" For Sue, KTWP remained a somewhat thankless chore, and she concluded that first note saying, "I'll try to wade through all the notes by the weekend and post some responses."

Although Sue sent a total of 33 notes the third year, they remained short and separated by topic. For example, after wading through "all the notes," her response consisted of a four-line note asking about the author's project. In other notes she wrote about a camping trip, thought she might have "four to six kids who might do the authors thing," accidentally posted several student notes to the wrong conference, sent some files that failed to transfer, uploaded two notes to the KTWP teachers from one of her students seeking some information ("I want to be an elementary teacher"), and voiced her opinions about what authors should be read.

Sue's overwhelming sense of frustration permeated her notes. The frustrations she expressed from the very first year of the project seemed to grow and magnify over the three-year project, and by the third year she expressed frustration in two distinct themes: technology and time. In terms of technology, her notes were often missent. They continued to have lines missing and would appear "truncated," and she continued to sound lost in efforts to navigate ("Ho do I find it on the network?"), reporting that she

“tried but got nowhere,” that she was “unable to get online all weekend.” The participation of her students and Sue’s own conviction that the technology had a place in her curriculum remained weak.

Over and over throughout Sue’s notes, the most common refrain was about her personal frustrations with the many constraints on her time, the “crises and demands.” She hinted at burn-out, maybe even getting out: “When you’re dancing about as fast as you can, you begin to wonder if you ought to leave the dance sometimes.” Interspersed throughout Sue’s notes are lines like, “I’m getting a bit crazy,” “after the craziness of the past week,” “Just when things are going well, s--- happens.”

In a report written in the spring, Sue wrote briefly, but made little mention of curriculum integration: “KTWP continues to be a small but integral and important part of my 9th grade classroom. Some NEVER are enticed by the invitation to connect with peers, or by the technology; some are faithful. Any effort is better than none.” In summarizing her experiences with the literature project, Sue said, ““We’ve been quite frustrated by the logistics of the author project-- we want to take advantage of such a wonderful concept, but the glitches of technology, schedules, human error, etc. have tested everyone’s comfort with ambiguity.”

Periodically, Sue’s notes would appear online after long periods of silence, and often they would express mixed feelings, a desire to participate and a lack of enthusiasm for the task: “Managed to download this morning. I’ll read and respond if anything needs specific attention.” Sue chose when to participate and when not to. When the other teachers were preparing a major presentation for the Kentucky Writing Program,

Sue wrote, "I feel like I've been under a rock for weeks." said she was "counting the days until spring break," and announced that she couldn't "make the writing program presentation."

Toward the end of the school year, Sue appeared online after a long absence ("Remember me?"). Unlike the other teachers, she did not write an evaluation at the end of the project because "the last thing I've had the luxury to do lately is be reflective" and so she could only "reiterate others thoughts." She was too busy to attend the weekend retreat at Shakertown in July when the teachers met to tie it all together and finish chapters for the book.

Epilogue. At one point in the final year, Sue wrote affirming McLaughlin's work on technical communities and likened that to the success of KTWP: "Those collegial groups where you talk about your practice and use the group as critical friends." "KTWP," she said, "has served those needs to at least some extent." For Sue the question was "whether we do best together when we are trying to orchestrate activities with the kids at our various sites, or when we use each other as professional critical friends." For Sue, the answer was ambiguous. Three years after the start of the project she continued her teaching at the Brown School, continued her work with the Coalition of Essential Schools-- traveling and presenting workshops, but did not continue to work with the integration of telecommunications in her classroom. Although Sue wrote and submitted a chapter about community building on-line, when asked to revise it for inclusion in the Teachers & Writers book, *The Nearness of You: Students and Teachers Writing On-line* (Edgar & Wood, 1996), she chose not to do so.

Summary

By examining the individual participation of three different teachers, three different experiences unfold. Although all participated frequently and consistently-- writing and sharing, reading and responding-- and although all involved their students throughout the duration of the project, these three individuals developed three different patterns of use, three different purposes for use, three different functions of use, and three different attitudes toward telecommunications.

Patterns. Although all three teachers wrote notes to the network regularly throughout the three-year period, the pattern and style of their notes varied. Emmy wrote the most. She wrote long, detailed notes full of personal narrative, humor, and teasing. She wrote in long gushes of thoughts. Bev also wrote regularly, like clock-work, but her notes were more informative. They were often long and detailed but were patterned report-like and focused on her students. Sue wrote very brief notes, usually one line or one topic long, and sometimes she sent several notes in a row and then stayed silent for long periods. Her notes were largely personal and emotional, metaphorical and melancholic: "I am dancing as fast as I can; digging out of a hole; living on the edge."

Purposes. All three teachers demonstrated a commitment to the network and to the project. All wrote to plan project-related activities, to coordinate student conferences, and to discuss educational reform in Kentucky. Emmy used the network as an outlet for her own stress and personal problems. She wrote as a way to think outloud for herself to hear. Bev relished the professional collegiality she found in the network. She shared

ideas and she raised issues for discussion. Sue wrote primarily about technical difficulties, work in her classroom unrelated to the network, problems she had with the project, and frustrations with her high-paced life.

Functions. The technology served as a connection between the teachers, and as a network, KTWP functioned as a result of collaboration and interaction. Individuals functioned individually. Emmy wrote for herself but at the same time she responded to what others wrote and she made regular pleas to the others to write more often. Emmy worked through the mandates of reform and the sudden move from fifth grade to fourth grade, an accountability grade, by talking with others about her challenges. Bev also responded to what others wrote and nudged them to write more often. She attended conferences and shared the materials, read books and commented, sent classroom stories and raised questions. Sue rarely responded to others, raised few questions, and even admitted on occasion that she chose not to read the others' notes. She expressed resentment over what she perceived as the network's problems and talked often about the stress in her life.

Attitudes. Emmy was enthusiastic and dedicated. When her account would crash, she always found another one to use. The network became her personal lifeline during sudden changes at home (the death of her mother) and at school (the move to fourth grade). Her students were strong participators. Bev took her work on KTWP seriously. She was committed and dedicated, and her students participated more than any other classroom. Bev kept all promises as demonstrated in many online projects (lit groups), and she maintained an optimistic attitude throughout changes beyond her control (the

demise of her Chapter 1 program). Sue vacillated between resentment and commitment. Participation for her was a chore but she often thanked the group for their support. Of the three teachers, Sue was the only teacher who had other networks and support available to her (Coalition of Essential Schools), the only teacher to be in the later stages of her career, and the only teacher asked to make no real changes during the grant period. Her school, her students, and her position remained stable, as they had for the fifteen years prior to the project.

CHAPTER 6

THE NATURE OF TEACHER LEARNING

To answer my third and fourth questions, what is the nature of the teacher learning and what factors fostered and constrained the learning, I shared the descriptive interpretations explaining features and patterns of the teachers-only discussion in general and each teacher's participation specifically with Emmy, Bev, and Sue. The teachers read my interpretations, as written, in which I analyzed the nature of the teachers-only discussion and their own participation. While all participants verified my interpretations of their experience and their participation in the Kentucky Telecommunications Writing Project over the three-year period, final interviews conducted with each of the three teachers further illuminated unique aspects of the individual cases and helped to explain the nature of their learning. Participant verification allowed cross-case comparisons to be made between my interpretation and theirs.

Teachers' Interpretations of their Learning

Using language taken from the interviews, in this section, I discuss each teacher's response to the KTWP experience: her comments about the nature of her learning in terms of technology, writing, and professional development; and her insights about factors that may have fostered or constrained her learning.

Emmy. Emmy confirmed my interpretation of her participation, calling it “accurate” and “interesting.” According to her, by writing and sharing online, she experienced “real release putting words down and looking back at them.” Her participation was primarily personal. “It was helpful to me. I found it to be an outlet for putting down my thoughts.” The electronic network served as a vehicle for “sounding off,” and so she did, “whether any one responded or not.”

Early in the project, especially the first year, “technical breakdowns” constrained Emmy’s use of telecommunications and participation. “When I first started we didn’t have a district technology person, and I felt like no one else was doing what I was.” She struggled with a sense of isolation at the school level and a lack of support from the school district: “I didn’t know who to contact in Paducah, and I felt pressure to meet the demands of my school. Sometimes a discouraging note on the system would set me back, and I felt discouragement from my own site. I felt a lack of administrative support. I had it but I didn’t know it at times.” Everything improved once technical support was in place locally: “Later we did get a technology person and the problems weren’t there.”

As a writer, having an audience of peers mattered to Emmy. “Writing was a weakness of mine. KTWP made me want to get online and sound like I knew something.” As Emmy’s participation grew more comfortable, she said it was “fun to get online to see what others were saying and had written. I got to the point where I really loved it.” Her “personal interest” coupled with “time to learn” and “having a computer at home” fostered her learning, she said. “I learned out of necessity,” she explained. “The more I learned the more I wanted to learn.”

Her learning, she felt, was extensive. "I became a stronger, better teacher. When this all started I was in my fifth year teaching. I thought I knew everything I needed to know." As a result of reading what her colleagues wrote, she was inspired to do the same. "I began to read on my own for the first time. Exploring on my own."

As a result of "teacher dialogue" and "organization of my classroom-- I had to rearrange my classroom time to allow use of a few computers"-- Emmy's concept of professional development changed. "My own growth as a teacher evolved because of KTWP and is still evolving." She cited a list of things she learned: "Students needed choice-- in the project students had to make decisions: integration of my content area with technology; and how to work with student's strengths." Most important to Emmy, she said she learned how "to individualize student learning by letting them go on and not holding them back." Through her participation with the other teachers she was "forced to think about my students and what they were able to do."

Two years after the Kentucky Telecommunications Writing Project ended, Emmy confessed that her students were not participating in any formal projects online, but she said they do use the Internet informally and individually for "student research." For herself, she reported that she was using telecommunications for "personal use as far as my teaching. I find information I can use in my classroom and basically do e-mail with other teachers that I've worked with."

Professionally, Emmy continued to receive many requests from other teachers and schools "asking me for help" and her own school made telecommunications "a school goal this summer." As a result of the project, Emmy was "more confident in my

teaching” and had “new respect for my colleagues at home and elsewhere.” She expressed strong feelings about training teachers in the use of telecommunications. “I feel offended when people call and ask me for help. There is no real reason to do this. It’s not a forceful thing. Imagine trying to train other teachers who can’t even double click the mouse, who don’t know how to use it, who don’t need it or want it. Personal investment is essential. Self-responsibility has to be there.”

Bev. Bev took issue (“I was shocked”), she said, with my description of her as a leader in KTW P. “But I think there were times that I did lead. Sometimes I felt obligated to address issues and discuss certain things.” Other than that, Bev agreed with my description of her participation: “For the most part I did try to keep the conversation professional. I would read the talk about personal lives and enjoy getting to know them, but I found it hard to write that way. For me, I was in the project to talk about issues at school, KERA, and KTW P. Friendly conversation was part of it, but I focused more on the other part of it.”

The project was a success for Bev and her students. “We felt really lucky and special that we had this. Not every kid liked it, but the majority felt really special. They became experts in our school because of their use of technology. We used video to document things we were doing in the school. The project gave us the equipment. When we opened the technology center, my students were leaders. They assumed a leadership role in the school. They had modeling from the students at the other schools. So many benefits. I still get phone calls from those kids. They write letters telling me what they are reading. The two years of students taught before the project are rarely heard from.”

Constraints, for Bev, included: "The time factor-- having the kids for just fifty-five minutes, trying to fit everything in, and make it work was hard. Especially the first year. I didn't know enough about technology to figure out how to solve problems. By the third year, lack of participation from other sites. Last year, lack of enthusiasm. Sometimes there was so much to read, I was overloaded. I hated the kind of pettiness that sometimes went on. It hurts the whole educational process. Money hurt. We never looked at student writing, analyzed the work."

At the time of the final interview, the project continued to inspire her. "It was a great model. So many possibilities. I appreciate it now. We signed up to do a sister's city project on the Scholastic Network. The kids are writing to college students in Oregon. We're trying, but it's not what I really want. My goal is to do something like KTWP, but I don't know if I can do it. It's unlike any other project. I am concerned about curriculum and how it's used. I am not satisfied having my students write about a typical day and then getting the same thing back. I want REAL communication. I want to refine what we did and I am finding that to be difficult. It's not enough to connect with someone. I have to figure out how to go beyond the typical."

Talking about her own writing, Bev admitted to being "very aware of the audience and who was reading it. I consciously felt I needed to put something educational in it. I never felt I could write just a breezy note." Bev's writing process, like her participation, was deliberate as well as thoughtful. "When I wrote notes I thought them out, went back, edited, and revised. I saved and went back over them before I sent. Especially the first year. I was very careful of what I said. How I said it. Most of my notes were not just

written and sent. I knew they were being read by lots of people and people I didn't know."

For Bev, telecommunications was "a way for my kids to go beyond Covington, something they don't typically do. I saw it as a way to motivate them to write-- another choice in the writing workshop. I saw a lot of one-sided postings where they weren't writing to each other. But in many ways the writing was a discussion and was important to my kids. I saw it as a very positive experience for my kids, motivating, purposeful, authentic. They could do a lot of different things, lots of choice. Different conferences. I liked that. I also liked the benefits of all the reading they were doing. They were reading stuff that kids at various levels were doing, other kids as models for mine. Looking back now, I can see all of this better than I think I did then."

Bev confessed she had been reviewing, rereading, and reflecting over the three years of student notes ("amazed at the student writing, the depth and the quality"). Bev analyzed the importance of participation from a pedagogical and theoretical perspective: "It was important to be in a literacy club. This club of people using language. My kids had not been members before. They tended to be dropouts. The kids felt a part of something, and they wrote poetry and fiction stories all by choice. Their writing improved. When I looked at their beginning pieces and ending, I saw lots of revision. Students were careful of their writing, saying exactly what they want to say. They felt a part of their community."

Professional growth ("big growth") was something Bev talked about a lot. "As a teacher, career-wise, so much has happened to me. Publications, workshops, classroom

awards. None of it would have happened without this project. I became a better writer. I type a lot of faster too. I didn't write anything before. Papers in graduate school, and that was really difficult. I was not used to writing. This made me sit down and think; I hated it. I identified with kids. It forced me to write. It's not as hard now. The chapter for the book wasn't intimidating."

Personally as well as professionally, Bev articulated her growth: "I've improved my self-confidence. I would never have gotten up in front of a group of people. It doesn't frighten me to death anymore. People wouldn't be inviting me as a speaker." She felt the biggest learning for her was related to her teaching. "I learned a ton about curriculum and telecommunications. Nothing in my classroom comes from a text anymore."

Professional isolation motivated Bev to be a strong participator: "I've always felt that teachers don't get to talk to each other, maybe before the bell in the hall or sometimes at lunch. But nobody ever knows what I'm doing in my classroom. Even when they have the same students. There is just so much isolation. I felt closer to the teachers on KTWP than those in my building; I talked to them more often than those in my building. I don't have a lot of colleagues at work who get into education. They are concerned with holidays and breaks. It's nice to find people who are into what's best for the kids."

The chief value for Bev was "being able to communicate with other teachers. I wanted the project to succeed and I wanted it to be good for my students so that made me think constantly. I thought about school and how to make it all work. It got me thinking

about my questions and problems, and the others online listened and encouraged me to do more thinking. It took my thinking to another level.”

Overwhelmingly, the experience was professionally positive for Bev and she did not hesitate to list many benefits. “The project sent me to NCTE and other places. My district wouldn’t have sent me ever-- only supervisors. I didn’t even know what NCTE was before I joined KTWP. It opened other opportunities too; I learned so much. I felt I was with teachers interested in teaching, reading educational books-- it was like joining a club. When you’re stuck in your classroom all the time, taking no classes, talking with no one, you think about attendance and lesson plans. The project allowed me to go beyond that to be with teachers concerned with bigger issues. I am totally different. Obviously, I learned so much about what kids can do. Kids helped me. I didn’t have to have answers. I depended on the kids a lot and they came through. We were all actively learning. All responsible.”

Sue. Sue described my interpretation of her participation as being “painful to read” but also “accurate” and “objective.” “I thought I communicated more,” she said somewhat sadly, and again repeated her feeling that telecommunications is “a cold medium” and “real tough” for her.

In terms of her participation, she said, “That’s my style in note writing, phone conversations, and e-mail, I am brief and to the point-- I’m cryptic. Unless you know me, it comes across as looking different. Communicating to people I don’t know well is kinda dangerous. My notes are generally pretty terse partly because I’m over-extended and busy but mostly it’s my style.”

Sue cited reasons she joined the project in the first place: "Busiest people get involved in more projects. Some of us are overachiever type A personalities, and if it's right for kids we're going to try it. Once in the project, I was committed. I felt guilt. I felt huge responsibility."

Commitment for Sue also resulted from "being able to have access" to computers. "Having it convenient" and "not having to go to a lab" once the computers were placed in her classroom the second year enhanced her participation by a "quantum leap." The technology was new to her and she was interested in finding ways to use it.

Mostly Sue talked about "feeling guilty" that she couldn't make "KTWP the curriculum" in her classroom. "KTWP couldn't drive it. I can't devote as much time as the others. It is an add-on. I tried to make it more integral, but it wasn't easy."

According to Sue, as a result of her participation she learned "nothing is as easy as it looks." The problem was the lack of knowing each other personally and being able to use the technology." She learned "how to do it." She learned about "things that don't work." She learned the "importance of planning ahead," the need to have "the right person to partner with," and that computers are "not a magic bullet."

"KTWP convinced me to encourage kids to write on computers more, to revise," Sue said. "It reminded me that having a real audience is no guarantee, especially if someone doesn't follow up." In terms of benefits to students, Sue said she was "convinced that good feedback has to be more personalized especially with beginning writers." Telecommunications "is not the best way to teach them to give good feedback to other writers. Due to distance, too much is lost in the translation." For Sue it was "not

useful and too much time was invested.” At the time of the project, she admitted, the technology was new and “intrigued them.” “Replicating this now,” she felt, “would be useless.”

Sue’s participation in the project differed from the other teachers because she was “over-stimulated.” For her, it was an “issue of isolation” different than that of the others. “My sense was I was the least isolated,” she explained. “I am surrounded by a lot of collegiality all the time. The thing I’m involved with outside of school is constantly provoking me. I had less need. I was getting a lot of collegial support and provocation already.”

For Sue, the project was a disappointment. She saw herself as different from the other teachers, as having different needs. “I didn’t read a third of what Emmy wrote,” Sue confessed. “It wasn’t what professional development means to me.” She felt the project was not a “good match” of participants. “It would have worked to build a network of teachers-- the right teachers, the ones who are ready.”

Other things hindered her participation as well. “Weak leadership” of the project was a major constraint for Sue. “I got frustrated and angry” she said, but it “pulled us together in ways we wouldn’t have had the leadership been different. We had conferences that didn’t go to everybody. Subversive conferences-- a small circle of friends especially the second year. We pulled together.”

Sue joined out of “fascination of what might be possible, especially for some individual kids.” She was interested in “professional reflection” because “there is no time to stop and look backward.” She enjoyed “looking at the dynamics of what was going on

and analyzing the politics. Watching how we operated. How it was playing out. I found it real informative to see how really different our styles were based on geography, values-- mountain and city folks. We never addressed that.”

Two years after the project, Sue did not use telecommunications in her teaching. “Last year I had a student do her senior project through e-mail with kids in New York. This year we’re not using it at all except occasional research on the Net.” The potential, she felt, continues to be “for getting teachers to break down isolation and get teachers to share their work.” Technology isn’t required. Citing Milbrey McLaughlin’s model, Sue talked enthusiastically about on-going work at the Brown school. “We have two groups of critical friends, and I facilitate one of them. We are learning communities based on the premise that by looking at kids’ work to inform us we will improve our practice. Peers and colleagues using real consistent protocols to examine student work. Tremendous potential.” In terms of KTWP, “we missed a wonderful opportunity.”

Cross-Case Interpretation of Teacher Learning

Analysis of the three teachers’ notes posted to the network, transcripts of interviews conducted throughout the three-year project, and excerpts from a final interview indicate that in spite of varying levels of participation, all three teachers felt their experiences were worth-while, and all would “do it again.” The project had been designed to help teachers meet the demands of reform by integrating technology and writing into their curriculum. Although all three showed evidence of having learned from their participation in the Kentucky Telecommunications Writing Project, like their

participation, the nature of their learning and their attitudes toward the experience varied depending on the teacher. Depending on their needs and their participation, different teachers learned different things. However, from the perspective of the opportunities offered by the project, teacher learning is discussed briefly in this section in the areas of technology, writing, and professional development.

Technology. The technological innovation that made the KTWP possible was relatively new at the start of this project in which teachers from five sites, with little experience with computers and none at all with telecommunications, formed a network, defined it for themselves, and integrated it into their respective classrooms. Although participating teachers were able to purchase hardware with project funds, they were given no real training in how to use it. All sites remained active throughout the project.

The three teachers spoke of their new skills as computer users; they broadened their telecommunications experience and sought other applications. Sue, especially, felt transformed. "It's broadened my horizons," she said. "I would never in a million years have thought I would have been interested in doing this." After an initial time period, teachers began to feel a strong sense of efficacy, sharing their learning and conducting workshops at conferences. As a direct result of their experiences in KTWP, Emmy and Bev published articles on the subject, led workshops for other teachers, and become technology coordinators for their school districts.

As evidenced in the data, all three teachers developed new computer skills by actively using the computers. In the process, they all learned how to telecommunicate, how to save files, how to upload, how to download, how to participate in a

telecommunications network, how to manage a class in a computer lab, how to utilize a stand-alone station, how to organize student learning in a variety of online formats, and how to develop curriculum using electronic resources. All three discovered the potential of telecommunications for making professional links, and they all came to value their participation in a teacher network that offered them support for their work. Finally, Emmy and Bev learned to integrate the technology in a seamless way, finding new ways to structure student learning, while Sue continued to see technology as an add-on to what she already did in her classroom.

Writing. The technology utilized in this project enabled teachers to form a network where text was exchanged electronically. Toward that end, they wrote notes to each other on a regular basis and read each other's writing daily. Although all had different styles, participants' writing improved as the teachers wrote more detailed and more fluent notes, learning with their students. Bev articulated how she learned to write on KTWP, "I write and the kids write." Like the students, the teachers used the electronic medium for helping each other revise and edit writing, especially toward the end of the project when they began to write for professional publication. Teachers in this project used the network to develop and conduct complex literacy projects, such as literature discussion groups and a comprehensive authors' project, enabling them to have theoretical conversations about the nature of writing and how to teach it. Emmy described some of what she learned, "To think that every time I wanted a kid to write, I had to come up with a prewriting activity seems ludicrous. Now when a student writes in my classroom, they know that there's going to be an audience for their piece, whether it's

the kids from Lexington, or the kids from Wheelwright, or somebody else. Nothing's artificial in my classroom."

Although all three teachers wrote regularly to the teachers-only area of the network, and although all three wrote articles for publication, only Bev and Emmy revised, edited, and published their writing. Of the three teachers, only two seemed to develop new skills as writers. As evidenced in the online discourse, Sue's writing did not change much over the three year period. Unlike the other teachers, she continued to write fairly brief notes with little elaboration of detail. She demonstrated limited awareness of audience, and unlike Bev and Emmy, Sue did not articulate personal gains in her own writing abilities.

Although all three teachers participated in discussions about how to teach writing, only Bev and Emmy attended workshops, read professionally, and shared their learnings with their colleagues online. Although all three planned and implemented student writing projects as part of KTWP, Bev and Emmy were the most interested, and in interviews, especially, they exhibited increased knowledge about how to teach writing. Bev's and Emmy's students were more active participants throughout the three-year period, and their students demonstrated gains on the state tests. Bev and Emmy talked at length about theories and strategies for teaching writing, and both showed a greater depth of understanding the writing process. Sue did not.

Professional development. Teachers in KTWP learned about technology and about writing, but they seemed to learn other things as well. Participation in KTWP offered them the opportunity to change, to develop self-esteem and confidence and to

examine their own learning processes. Sue described herself as the kind of teacher with “this whole typical syndrome of ‘I can’t do this.’” Bev’s words echoed Sue’s as she described her feelings at the start of the project when confronted with the challenge of teaching middle school. “‘I can’t do it. I don’t know anything about them.’ I told the principal. ‘I’m a first grade teacher. I don’t think I can do this.’ It was all new to me.”

Professional development for the teachers came slowly, over the three years, as they grew confident and found their voices. All three teachers increased their sense of professional competence. The new skills they learned opened doors for further development. They increased their desire to know and they voiced questions and articulated their insights about student learning. They developed new beliefs about the value of telecommunications for kids, about how to teach writing, and about their own learning.

Bev and Emmy became teachers of teachers. They developed skills at providing staff development, at mentoring others, and at understanding teacher learning. According to Emmy, “I think we rush people into the teaching career so soon. The internship year. . . the student teaching year, it doesn’t really give them the flavor. I kept seeing things that students were having trouble with and I kept wondering about, ‘Well, why are these students having trouble with it?’ And then once I got into the classroom myself and I saw these same type students having trouble and struggling with those same things, I kept thinking, ‘There’s got to be a better way for this.’ I had those textbooks, and I’d guard them with my life and do everything the textbook said. But each year, I was searching out. It’s a continuous process.”

Factors that Foster or Constrain Teacher Learning

Based on the analysis of three years of discourse from the teachers-only discussion area of the Kentucky Telecommunications Writing Project and from cross-case comparisons made between the teachers' perspectives and my own, I identified several significant factors that fostered as well as constrained teacher participation and learning. The discussion of these factors is organized according to eight conditions that influence teacher learning: collaboration, shared power and authority, egalitarianism among teachers, autonomy and choice, organizational goals and feedback mechanisms, integration of work and learning, accessibility of external sources of learning, and personal goals. Drawing from the teacher discourse, experiences, interviews, and artifacts, I illustrate how these factors facilitate or impede teacher learning.

Collaboration. At the outset of the project, teachers in KTWP had never met, did not know each other. All were new to telecommunications, and all were given the opportunity to work together to meet the challenges. Teachers quickly became resources for each other-- sharing, helping, and supporting. Mutual support appeared to be a critical strategy for dealing with the personal and professional stress associated with mandated reform and change as well as other difficulties in their lives. Feeling part of a greater whole, a member of the club, gave the participants a stronger self of self, an opportunity to learn, a role to fulfill, and a safe place to work.

At times, especially as they talked privately in interviews, teachers exhibited a lack of mutual trust and demonstrated a tendency to want to blame "failure" on others.

Such undercurrents undermined the collegiality of the group. Problems were not always addressed. Teachers confided in private but were reluctant to voice to the larger group. "What I have learned in the past is that projects really take commitment from your partner teacher and in every case I have been let down," Sue said, "really without any explanation."

Shared power and authority. This project was unusual in that nothing was prescribed or required, nothing was tested, and nothing was expected at the outcome. Teachers did not have to prove anything. Together, they and their students owned the design of the project. The open-ended nature of the project gave teachers the freedom to make it their own, to shape it, to share it with their students and with each other. Although a director was hired each year, that person served only as a facilitator.

Sometimes teachers did not want to collaborate, seeking answers instead. The open-ended nature of the project caused distress, especially early in the project, and teachers were uncomfortable with the lack of leadership and direction. At other times, strong leadership kept the teachers "on task" making the social and personal aspects of their discussions less common. Teachers did not participate as frequently as they did during times of less intrusive leadership.

The prestige and power associated with this grant gave teachers permission to use the technology and to use it in new ways. Teachers were given, as Emmy called it, "a license to change." Being part of KTWP was a professional feather and a personal challenge, almost a double dare. Even though they lacked computer training specifically, teachers were handed the opportunity to learn by doing.

Issues of ownership were complicated by the nature of the special funding. Emmy, for example, suffered administrative problems the first year handling grant-related “paperwork” at her district’s central office. Sue struggled especially with aspects of the project related to the funding. Grant politics, leadership issues, and accountability caused problems on occasion for all participants.

Egalitarianism among teachers. Teachers worked and learned with their students and with each other. Although the participants had little in common, they were all considered equal in terms of their roles and their expertise. Emmy said, “My colleagues are all older than I am, and I learn a lot from them.” Teachers chose to write about their lives as well as their work. They defined a form for their writing that was informal, caring, and honest. They became “almost like a family of teachers” and, as one teacher confided, “when frustrated, I can sit down and write about it on-line.”

Autonomy and choice. For some teachers, it was difficult to believe that the project truly belonged to them. They wondered about “a hidden agenda.” In the beginning especially, they were somewhat suspicious. Sue explained, “For so long teachers have been jerked around; they’ve been told one thing, and something else has happened. Their work has not been credited. They’ve done things, worked real hard on things that have been discounted, and they’ve learned the hard way that you don’t trust and buy, right off the bat, much of anything.”

These teachers learned best by “doing” for themselves. They chose when and how to participate. In the cases where teachers worked alone at their site, participation was especially strong. Those who had no one to manage the technology for them

appeared online sooner. Those who had no one to speak for them participated more and wrote more than those who were in situations with more talkative or computer-savvy colleagues.

Although teachers seemed to thrive best when they had control of their own learning, it was harder to create the same opportunity for their students. Control was an issue in some cases. “I do maintain control of the classroom. That’s my job,” Sue said, in response to a discussion where she admitted to be the sole telecommunicator in her classroom, the one to do all the logging on and sending/receiving files. “I’m real torn between giving up the ownership and the control of it and letting students do it,” she said.

Organizational goals and feedback mechanisms. Teachers needed time to master the technology, to get comfortable with the project, to find their way. They needed time to manage the paperwork, plan the project, read the discourse, and write to their colleagues. . . .Never enough time, the teachers agreed. For Sue, the project felt “like I’m tacking on something else, adding one more thing.” The teachers needed a private space and some time to get acquainted before they opened up on more personal levels and formed community. The three-year design of this project was an important part of its success.

The teachers responded to each other. They read and they wrote back. They asked each other questions and they offered each other answers. They shared their knowledge and their praise. They felt supported. The teachers also received positive feedback from the broader community. For example, Bev’s students scored well on the state testing and so did Emmy’s. Sue’s did not, and her participation afterward showed a

decline. "I wish everyone," she wrote, "could feel as good about the kids' showing."

A lack of reciprocity discouraged hesitant or reluctant writers. This was a problem for the students and sometimes for their teachers as well. "I'm disappointed in the kids' buy-in. It was fascinating for a while and then it stopped being interesting. When they didn't get feedback; it was tedious to do," Sue said. In her own case, she complained, "I feel like I'm overextended because the person next to me is not."

Integration of work and learning. The teachers were not afraid to fail. They seemed to draw strength from an attitude that welcomed failure. As Bev said, "Always in the back of my mind is 'We're going to try this. If it doesn't work, it doesn't work.' I'm trying all the time to see what will work best. There are things that completely flop. I'm okay with that. If I learn something by it, it's okay. And my kids know it. My kids know that I'm going to make mistakes. I'm not afraid to show them that." But risk-taking was not always welcomed by the teachers. "I'm used to if I really have a problem to going to some manual and telling me what to do, and there isn't one," Bev also said. Cognitive dissonance and a reluctance to suffer process sometimes caused distress.

Accessibility of external sources of learning. By way of general factors, access to the network was critical. Special funding enabled this project to happen and gave access to all participants equally. A project director was available on a twenty-four hour basis to trouble shoot, make on-site visits, or answer phone calls. Through the project, support was available; access was possible; resources were provided. As the teachers developed expertise and mastered skills, they became help for each other.

Contextual factors unique to each situation caused difficulties for some of the teachers. Wheelwright, for example, located in the mountains of eastern Kentucky suffered chronic “line noise” that often kept Bud, Delores, and their students off-line. All of the teachers experienced technical problems at one time or another. Mastering technology and managing time were issues for all three of the teachers but they remained issues for Sue throughout the project.

Personal goals. Much of the writing took the form of personal narrative and revealed much about the writer. Writing stories of their students’ lives and of their own lives, of the immense challenges they faced, gave teachers a vehicle for thinking and sharing. Teacher story-telling and the personal nature of some of the writing was not always welcomed. “I would like to deal with academic rigor more in this project,” Sue confided in an interview.

Personal goals and desired outcomes varied for individuals involved in KTWP. This mismatch of purpose created a barrier for individuals. For example, throughout the project, Sue voiced dissatisfaction. “Kids are not getting the rigorous critiquing of their work that they would like.” She felt “put upon,” saying, “I can’t do it all and I never feel like I’m doing enough.”

Whether the need was personal, professional, or a combination of the two, the teachers seemed to learn in direct proportion to their sense of purpose and need. For example, without the ability to connect with KTWP, Emmy would have been isolated in her attempts to implement writing the first year, to move to fourth grade and implement portfolios the second year, and to manage the challenges in her personal life throughout

all three years. In the sense that the technology made Emmy's growth possible, visible, and documented, then the technology fostered Emmy's learning, and just as certainly as the positive impact, the technology also hindered Emmy's efforts, especially in the beginning. Emmy, as well as the other teachers, had serious struggles attempting to master the technology. Often her frustrations with the process seemed to get in the way of her other efforts.

From the outset, Emmy was motivated and open. She saw technology as a vehicle for trying some new things. As a fifth year teacher, Emmy began the project ready to tackle new concepts and new skills. She had just attended a National Writing Project writing institute and was highly motivated; she was in an innovative state of mind. It was at the NWP that she heard of KTWP, picked up an application, and decided to apply ("This is wonderful that it's combining the two things I really enjoy [technology and writing], and I don't have anything to lose to apply for it.") She seemed to be in the midst of a professional growth spurt.

Having just attended a writing project the summer before the project, Emmy was ready to explore a variety of ways to think about writing with her students. She saw the technology as a vehicle. Toward that end, Emmy set her own learning goals in the project. She mastered the technology quickly, trained others, and moved into a leadership role. When faced with unexpected professional changes, especially the move from fifth to fourth grade, she turned to the technology for help with planning and instruction. As a result of her mother's sudden death and other personal challenges, she turned to the online community for personal and emotional support as well.

Summary

The telecommunications technology per se did not foster teachers' learning nor did it constrain it. As mentioned elsewhere, this study is not really about the technology, but the technology makes the study possible. Certainly without the electronic connection, there would have been no Kentucky Telecommunications Writing Project, no study, and no opportunity for the teachers to form a network or to explore the integration of technology and writing into their teaching. Yet "simply providing hardware to a school will not change the teacher's daily practice" (Hebenstreit et al., 1992, p. 26). Perhaps it is important to remember that the teachers applied to participate. Even those most fearful of the technology recognized the invitation as an opportunity to learn, and they wanted to learn.

Analysis of the individual participation of the teachers revealed different experiences and different outcomes even though all participated in the same project over the same period of time. Personal responses drawn from teacher interviews, from teacher notes, and from a teacher survey suggest that it was the individual who was the decisive element in the learning. Contextual factors such as personality, world view, life experiences, prior knowledge, and general attitude seemed to determine the nature of the individual experience. However, certain factors seemed more problematic than others and caused frustrations that hindered teachers' efforts to learn from their experience. The factors that affected teacher learning go beyond the machine, beyond the lights and wires. In general, *how* teachers participated mattered most to their learning.

CHAPTER 7

SUMMARY AND DISCUSSION

The purpose of this study was to examine the teacher-only discussion area of one telecommunications network, analyzing the participation of three teachers over a three-year period and comparing their interpretations of the experience to determine the impact of telecommunications networking. To study this phenomenon, I analyzed all notes written by teachers to the teachers-only area of the Kentucky Telecommunications Writing Project. I focused in detail on the participation of three teachers in the project, I conducted interviews with the participants, and I verified my interpretations with theirs. In this chapter, I summarize and discuss the results of the study and consider implications.

Summary of the Results

This study describes the participation of teachers on one telecommunications network and reveals three areas of teacher learning in terms of writing, technology, and professional development. Results indicate that teachers vary in their commitment to the network and their learning from participation. The study confirms Smylie's (1995) seven factors that work as facilitators or barriers to teacher participation and learning, and it suggests that the most critical factor was related to the personal goals of the teacher. To

the extent an individual teacher was able to learn depended on the degree to which she felt comfortable, the degree to which her needs were met, and the degree to which she was willing to tolerate imperfection. This study demonstrates that the process and success of teacher development depends “very much on the context in which it takes place” (Fullan & Hargreaves, 1992, p. 13).

Although the study was exploratory, it does direct attention to an area of concern that has been largely neglected in the research literature. Grounded in theories of writing and research in professional development and telecommunications, this case study demonstrates that telecommunications does and can support the professional development of teachers, contributing to the process of life-long learning. Telecommunications also seems to support productive change. Although this study was limited to an exploration of the nature and impact of the participation of three teachers on one small electronic network, it was conducted over a three-year period, during a period of massive educational reform, and the findings raise important issues about complex processes. At issue are questions about appropriate professional development and the suitability of telecommunication networking as an effective learning environment for teacher learning.

Teachers with no prior knowledge or expertise were required by educational reform and state law to integrate technology and writing into their teaching. Private funding enabled them to form an electronic network, creating an opportunity for professional dialogue with other teachers in the state. Almost immediately they found their way on-line, learning along with their students in the process, and overcoming technological difficulties. As soon as they opened a teachers-only discussion area, a

private discussion, the bulk of their writing doubled. All teachers participated fully, writing as regularly as once a week (sometimes much more often), sharing ideas, expressing concerns, and planning for the project.

Following no preconceived blueprints, the teachers' notes sent to their network took the form of friendly letters and were mostly informal and affectionate. Reading and responding to each other's notes, the teachers used personal narrative, humor, questioning, and the language of civility. In the process, they created a discourse community where all participants were equal, sharing stories of their lives from school and from home. Domain analysis (Spradley, 1980) revealed a relationship between the pressures of statewide mandates as well as other factors beyond the teachers' control and a clear need to be autonomous and secure in their self-definitions as professionals. They used words of support to help alleviate the levels of stress and personal angst often expressed. Reciprocity, listening carefully to each other's words, was a skill they visibly developed through the use of positive feedback, encouragement, validation, and affirmation.

By the final year of the project, the bulk of the discourse focused on curriculum matters, and most of the notes served to plan and manage a complex authors' project for their students. Teachers were actively writing of their experience, helping each other revise and edit, and submitting their work for publication. Together they planned and presented their learnings at state and national conferences.

A closer look at the individual participation of three of the teachers revealed three different kinds of experiences. Although all three involved their students and participated

consistently throughout the duration of the project, they developed three different patterns of use, purposes for use, and functions of use. In the end, they had three different attitudes toward the project and telecommunications, in general.

One teacher (Emmy) wrote long, detailed notes full of personal stories. She used the network as a support system for working through personal grief, sudden changes in her teaching, and the weight of state accountability. She called her experiences “life changing.” Another teacher (Bev) wrote regular notes, written in a more formal, report-like tone. She detailed her classroom, focused on her students, and used the on-line community to grapple with professional concerns. She claimed that telecommunications “changed my teaching.” The third teacher (Sue), although a regular contributor, wrote brief notes with few details. Her primary topic was frustration, almost always a one-sided communication. She called the project a “disappointment.”

Teacher learning as determined from the individual perspectives was substantial in all cases but varied depending on the case. All teachers reported increased computer skills and felt more confident about how to integrate the technology into a writing program. All felt the experience had strengthened their own abilities as writers and made them more thoughtful teachers of writing. In terms of professional development, all of the teachers developed new beliefs about the value of telecommunications for kids, about how to teach writing, and about their own learning. Two of the three teachers experienced more visible growth as a direct result of their participation by publishing their writing, presenting at professional conferences, and becoming teachers of other teachers.

Cross-case comparisons made between the teachers' perspectives and my own identified and confirmed Smylie's (1995) seven factors that work as facilitators or barriers to teacher participation and learning: teacher collaboration, shared power and authority, egalitarianism among teachers, autonomy and choice, organizational goals and feedback mechanisms, integration of work and learning, and accessibility of external sources of learning. The over-riding determining factor, however, seemed to reside with the individual. For example, all of the teachers had access to the network and all experienced difficulties with access during the project. Undoubtedly, access was an important factor in terms of participation and teacher learning. All things being equal, how a teacher viewed the access issue seemed to depend more on her *attitude*. For all three teachers, access was a frustration and an important issue. But two of the teachers talked about access as being a problem to be overcome. Access difficulties, in other words, were part of the process. For the third teacher, such difficulties were unforgivable, a wall that stopped her "cold."

For the majority of the teachers in this study, telecommunications was not a burden or a thankless task. It was a worthwhile endeavor and became an integral part of the entire learning process, demonstrating that when technology was not a marginal addition, curriculum and instruction were changed. The effective use of technology was possible when the teacher was a risk-taker willing to learn along with students, willing to view hurdles as part of the learning.

Teachers who benefited became more confident overall and were able to communicate effectively about their own learning. They became highly independent as

learners: they increased their use of technology on a day-to-day basis, worked well collaboratively, and shared their expertise with others. They became leaders in the field, talking and writing about their experiences. Their students scored high on all state tests. Based on their stories and experience, solid evidence exists that intensive use of telecommunications networking can lead to significant personal and professional growth.

This study explores major issues, including a description of what participation on a telecommunications network might look like and the importance of providing teachers with skills, time, and ownership if they are to grow as professionals. The project documents teachers' efforts to meet the demands of educational reform and to integrate technology and writing.

Discussion

Seymour Sarason (1990) predicts that educational reform will fail until we acknowledge the importance of schools as places for teachers to learn too. At issue to me was the question of how teachers learn. What are the conditions of an electronic discourse community that facilitate or hinder teacher learning? The story of the Kentucky Telecommunications Writing Project offers evidence and experience suggesting that telecommunications can be a powerful vehicle for supporting teacher learning.

Most learning theories describe a relationship between learners and their environments that reflect Dewey's (1938) model of experiential learning. The learner is in a situation where she must define a dilemma or problem, analyze several solutions, and

take action. Bandura's (1977, 1986) social learning theory defines the social context of the learning situation. Learning occurs by interacting with others. According to Bandura, certain conditions in the learner's environment influence the development of the learner's perception of positive outcome expectations and sense of self-efficacy making them more likely to take risks, experiment, and be more creative. Guskey (1986) categorizes teacher efficacy as general and personal. For example, a teacher may believe that telecommunications is a tool that should be integrated into a learning engagement (general) but the teacher may not believe that she can do it (personal). For the learning to happen enactively and vicariously, according to Bandura, the teacher must observe the actions and outcomes of others' experience.

Incidental learning theory is informal learning directed by the individual. It occurs without intention usually as a by-product of other activity. It takes place in the everyday experiences and happens in an unplanned, unexpected way. The surprise inherent in the experience or situational context of the problem and the learner's ability to make meaning of the problem are factors that contribute to this kind of learning. Learning environments conducive to incidental learning are open-ended, share authority, and value collaboration and communication (Marsick & Watkins, 1990).

Organizational socialization theory (Van Maanen & Schein, 1979) describes the way members in an organization learn from the everyday experiences related to a specific setting. Learning is integrated with work, is socially constructed from relationships with peers, and is individualistic-- validating personal characteristics.

Smylie's (1995) synthesis of learning theories identifies seven conditions that constitute an effective learning environment. This study confirms Smylie's factors and demonstrates theories of teacher learning that worked as facilitators or barriers to teacher participation and learning in the Kentucky Telecommunications Writing Project: teacher collaboration, shared power and authority, egalitarianism among teachers, autonomy and choice, organizational goals and feedback mechanisms, integration of work and learning, and accessibility of external sources of learning. Based on the confluence of these theories, the perceptions of the teachers in the Kentucky Telecommunications Writing Project, and the empirical evidence gathered over a three-year period, this study strengthens the case for developing these conditions and opportunities for teacher learning to occur.

According to research conducted by Glennan and Melmed (1996), three common requirements are needed for successful support of teacher learning: The first requirement is adequate time for teachers to acquire skills and to plan. Although KTWP was designed over a three-year period, the teachers were not released or supported financially. All of their writing was done in free moments at school, time at home, and on weekends. Mappings of the discourse show marked increase in volume during holidays and snow days. At one point, Sue even asked for release time, saying they should be allowed time to write. No one responded to her request. Lack of time remained one of her most common complaints.

"Teachers engaged in reform universally complain about the shortage of time in which to develop the plans and new skills needed. The problem is that many of those

skills must be learned at the same time teachers are carrying out their teaching functions. Reforms enabled by technology require collaboration among teachers rather than simply allowing teachers to make the changes in the isolation of their own classrooms (Glennan & Melmed, p. 76). What might this project have done for all participants, particularly for Sue, had it provided release time for the teachers to write? Although teachers wrote regularly, support in the form of a schedule, a plan, some organized time in which to write, might have helped.

The second requirement cited by Glennan & Melmed as needed for successful support of teachers is assistance keyed to the needs of the teachers and provided when they need it. The teachers in this project had each other for assistance and they had the director of the project. Yet in Sue's case, her participation was consistently weak for three years. The problem was identified in private conversations by others, but nothing was done to help Sue. No consideration was given and no modifications were made for individual needs. Is it possible for such assistance to be provided via online services?

Finally, Glennan & Melmed suggest that teachers need a clear vision of the purposes and the goals that guide the program. The open-ended nature of KTWP caused several teachers to flounder at times, yet all remained fairly enthusiastic. The danger inherent in innovation without vision is that "these exciting things will not add up to anything" (p. 76). Perhaps the KTWP should have known better in advance what its goals were, and perhaps stronger leadership would have enabled even Sue to succeed. Based on the findings of my study, this point is inconclusive. To really investigate the strengths and the limitations inherent in telecommunications, to explore opportunities not

even imagined, might require freeing up teachers, trusting their professional judgements, and supporting their efforts. Many questions remain about issues of leadership.

Certainly, conditions and opportunities were present for teachers to learn in this situation, and telecommunications did support teacher learning. Writing online as part of a telecommunications network, teachers articulated the day-to-dayness of teaching, told personal stories, sought help, suggested resources, supported each other, and grappled with complex issues. "Knowing how to speak, including how to frame questions, how to grapple with answers, how to identify problems and focus solutions, how to use theory to inform practice, and so on, is as important as knowing what to speak about" (Richert, 1992, p. 192).

Social psychology argues that a sense of self comes through social behavior involving the dynamics of communication within a community, and trends in professional development for teachers suggest that "teacher development is more social than individual" (Mackinnon & Grunau, 1994, p. 173). In order for this to occur,

the oral and written forms of language must pass back and forth between persons who both speak and listen, or read and write-- sharing, expanding, and reflecting on each other's experiences. Such interchanges lead to ways of knowing that enable individuals to enter into the social and intellectual life of their community. Without them, individuals remain isolated from others; and with out the tools for representing their experiences, people also remain isolated from the self (Belenky, et al., 1986, p. 26).

The number of notes written over the three-year period, the nature of the topics discussed, and the elements of a supportive community attest to the finding that telecommunications provides an opportunity for teachers to bring to conscious thought the dilemmas of their work. It is a way to break professional isolation. Writing regularly allowed at least two

of the teachers to take control of their own professional development through systematic reflection. Feedback from colleagues, the social nature of the discussion, provided a powerful opportunity for learning.

As a result of their participation, the majority of the teachers in the Kentucky Telecommunications Writing Project experienced enhanced motivation, increased self-esteem, time to talk with colleagues, and the opportunity to collaborate in various projects and explore pedagogy. Teachers reported: changes in their role as teacher, increased skill as teachers of writing, and comfort with new technology.

Implications

"What is missing from the knowledge base for teaching," according to Marilyn Cochran-Smith and Susan L. Lytle (1990 p. 2), "are the voices of teachers themselves, the questions teachers ask, the way teachers use writing and intentional talk in their work and lives, and the interpretive frames teachers use to understand and improve their own classroom practice." Where else in the world of education do teachers begin to develop a "voice" to describe what they do and what they believe? How do they find opportunity to converse, to speak about the experience of their work and their lives? Where are the professional growth opportunities that enable the kinds of thoughtful conversations that allow teachers to articulate and understand their practice? The electronic discourse community gave teachers a vehicle for talking about their work.

In her comparative biography of five women, Mary Catherine Bateson concludes that "Women today, trying to compose lives that will honor all their commitments and

still express all their potentials with a certain unitary grace, do not have an easy task. It is important, however, to see that, in finding a personal path among the discontinuities and moral ambiguities they face, they are performing a creative synthesis with a value that goes beyond the merely personal” (Bateson, 1990, p. 232).

Perhaps the chief value of this study has been in its attempt to honor the voices of the teachers in the Kentucky Telecommunications Writing Project. By using real names, by studying their writing, and by sharing my interpretations with them for purposes of verification, I have attempted to portray some of the complexity and raise some of the issues inherent in teacher learning. This study has implications and suggestions for further action in three key areas: professional development as a support for curriculum reform, teacher learning situated on an electronic network, and qualitative research in technological integration.

Professional development. This study demonstrates that the professional development supported curriculum reform. The Kentucky Telecommunications Writing Project was an opportunity for teachers to consider innovations, especially in the integration of technology and writing. Sue was “motivated by the opportunity to try something new.” Emmy felt she was “given a license to teach the way I feel that the kids need,” and her participation in the network resulted in a “drastic change” in her teaching. Bev thought it would enhance her work with Chapter I kids, but found it forced her to integrate her teaching: “In the beginning, I tried to do reading workshop half the period, writing the other half. And it just wasn’t working. There was no room for technology. So I had to make a change.”

In a survey of several hundred West Virginia teachers (Howley & Pendarvis, 1994) teachers revealed they were more interested in instructional applications of telecommunications than in professional development applications of telecommunications. Furthermore, according to respondents, the preferred means of learning about telecommunications was from colleagues. The purpose of the Kentucky Telecommunications Writing Project was not the professional development of teachers. It was an active project designed to help teachers and students integrate writing and technology into their classrooms, meeting demands of state reform. The network gave teachers time away from their classrooms to think. They had colleagues beyond the politics of their local schools with whom they could talk, commiserate, and share ideas. They planned and implemented curriculum collaboratively, and they demonstrated the value of teacher networking as an ongoing means of curriculum innovation.

Findings from this study support findings elsewhere that telecommunications can advance school reform: technology must be planned for; it must be implemented slowly as an essential part of the curriculum and not as an add-on; and it can reduce educational inequity if technology is accessible for all (Ramirez & Bell 1994). The Kentucky Telecommunications Writing Project was not about professional development, but it represents a slow growth model of professional development in which teachers were given the support they needed to make change happen in their classrooms.

Any study of teacher learning and curriculum reform is linked, at least implicitly, to questions about student learning. Initially, this study was conceived to research the impact of telecommunications on student writing, but somewhere along the way I

became focused on the teacher-talk. As a teacher and a writer and a telecommunicator, I was intrigued by the opportunity to explore this cyberspace culture of my peers. How does the teacher learning relate to student gains? Such data could be considered in further study.

Teacher learning. The descriptions and interpretations of this study are unique to the specific situation and are not necessarily generalizable to other similar cases. This is a case study, a look at a single electronic network, and exact replication of this study is unlikely. Findings therefore are limited to preliminary kinds of generalizations. This is an exploratory study that at best raises likelihoods and other questions, in this case identifying several issues related to the use of telecommunications as a vehicle for professional development and increasing the complexity of conversation on the subject of telecommunications networking. A case study such as this is not the same thing, for example, as understanding in greater depth the complexity of teacher learning from the perspective of individual cognitive and psychological states.

Research on the characteristics of growth-seeking teachers suggests that teachers' attitudes toward collegial relationships, curricular changes, district mandates, and their personal growth determine their behavior (Howser, 1989). In the Kentucky Telecommunications Writing Project, the context for teacher learning was really situated in two communities: the telecommunications community and the local school community. The interactions between the two, coupled with the teachers' own proclivity toward change and who they are as people seemed to influence participation.

Assuming that part of professional development is establishing need, then I wonder what needs factored in Sue's experience. Clearly, for Sue this project represents a different experience than it did for Emmy or Bev. For Sue, it was not a failure, but it was not the same kind of success. Compared to the other teachers, Sue is not asked to make any changes: her school does not consolidate, she is not asked to teach a new grade or discipline, no one close to her dies, she experiences no personal challenge or major illness. None of her students lose their legs on the railroad tracks, as did Bev's, and none of her students get arrested for bringing guns to school, as did Emmy's. Sue's students are stable and privileged. So is Sue. As a member of the Coalition for Essential Schools she has answers for her own professional growth, support in that network.

Why did Sue have such a fundamentally different experience? How important was it that she was older, more experienced, secure in her situation, privileged in her school's setting, and free of imposed mandates? Sue, as mentioned, was the only teacher studied who suffered no sudden loss, experienced no emotional trauma, or made no drastic changes. Her situation remained stable throughout the three-years. What psychological theories support different learners, diversity, and different contexts? This study raises questions about personal variables.

Lieberman's (1994) research based on theories of teacher learning presents "a framework for building a culture of support" based on collegiality, openness, and trust in which she cites other studies about network building, coalitions, and collaborations. She states, "Along with their positive qualities and contributions, we are finding out that they are not without their problems" (p. 27). Hargreaves (1994) also presents a darker side of

professional development. He talks, for example, of the tension between voice and vision-- "a chaotic babble" where "there are no means for arbitrating between voices, reconciling them, or drawing them together." He asks, "Is this 'contrived collegiality' or a collaborative teacher culture?" (p. 67). This study raises questions about the nature of collaborative teacher networks.

McLaughlin (1994) defined healthy professional communities as places that "embrace diversity, maintain problem solving structures, maintain strategies for critical review and reflection, exhibit high levels of trust and teamwork, and pay active attention to the ongoing renewal of community" (p. 48). Certainly, the Kentucky project was designed to be such a community, and deeper issues of diversity, problems, trust, and renewal are raised by this study.

Clearly, telecommunications is a "felicitous" tool for the professional development of teachers because it extends the school day and breaks down traditional barriers of teacher isolation. It allows learning to occur collaboratively across both time and distance and yet can happen in the comfort of a teacher's home and for individual purposes. Tailor-made, it can support teachers as they seek new ideas and grapple with reform efforts and curriculum innovation (Davies, 1995; Hebenstreit et al., 1992; Tinker & Kapisovsky, 1991).

Qualitative research. This study shows that qualitative research can be conducted on technological innovations. Many studies have demonstrated quantitatively that electronic mail offers useful data. After all, each note, when uploaded or sent to the telecommunications network, is automatically numbered, logged, and counted. Patterns

are easily mapped: categorizing and describing the communications in terms of message streams is one common level of analysis, a proven one.

The emerging phenomena of telecommunications changes and challenges traditional methods of qualitative research, but advantages exist. For example, interactions are largely text-based, avoiding the difficult problems of interpreting nonverbal communication and enabling the data to be collected without the intrusiveness of video cameras or human observers. The online connections allow the researcher to request interpretation by the participants. The interactions are self-transcribed, resulting in a retrievable communication trail. Online access enables a recursive modification and verification process as data analysis reveals emerging themes and informs the collection process.

Despite these advantages, however, a massive number of pages accumulates, without established methodologies for analyzing a mass of messages. Before I conducted this study I wondered about methods. For example, how does an educational researcher studying a telecommunications network go into the field? Participant observation can be done from the ethnographer's home computer; is that a "natural" setting? If they are unable to see the researcher, do participants realize or remember that they are being studied? Does it matter? How does the textual representation of the discourse change the nature of the discussion? Hidden messages, lack of non-verbal cues, and unrealistic perspectives seem to be potential limitations. While it was not my intent in this study to forge new methodologies for studying online discourse, clearly new methods are called for (Schrum, 1995).

In the process of conducting this study, I believe I have learned some things that can inform other qualitative studies. From this study I learned how to build a data-base from an online community: trapping or downloading all correspondence, storing or saving all the e-mail on disk, compiling field notes or electronic participant observations, and conducting formal and informal interviews online. As a result, I discerned that the electronic collection process is generally like any ethnographic process, only electronic, requiring excellent data management and lots of back-up files. Rich description, the researcher as the research instrument, naturalistic setting, and participant observation-- I learned that it is feasible to conduct case study research of a telecommunications network.

Conclusion. Results of this study, although not conclusive, identify the need for further work in this area. According to a survey commissioned by the National Teachers Association in 1993 and conducted by Princeton Survey Research Associates, 54% of classroom teachers had access to computers in their home and 65% of the teachers rated themselves as having good or excellent computer skills. These numbers can only be increasing. As technological innovations continue to become a standard component of classroom settings and home life, teachers will rely more and more on these tools to achieve goals.

More than computer skills, teachers need training in fundamental ways that support educational reform. Such training seems to happen on a telecommunications network like the one described in this study. So many rapid changes-- we seem to be in the early stages of exploring how learning can be supported by technological applications. "We are only beginning to find ways to facilitate integration of new

technologies into the classroom for the improvement of teaching and learning. Use of technology in teacher education and professional development activities may provide the time necessary for educators to gain confidence, identify appropriate uses, and experiment with specific techniques for their own classrooms” (Schrump, 1992, p. 17).

How do we help practicing teachers make the kinds of shifts required by reform and technology? How do we train teachers to be reform agents, change agents, teachers who can weather and even thrive in high-stress levels of rapid change? How do we begin to meet the professional development needs of *all* teachers?

Certainly, electronic communications offer an environment in which a broad range of writing and research can be exercised and studied. Current understanding of how telecommunications networks facilitate teacher learning is vague, unclear, and clouded by unsubstantiated claims. This study has provided one case for examining teacher participation and learning as situated in an electronic discourse community. It explored one model of teachers as problem solvers working together on common problems of instruction, designing staff development over extended periods of time, and exemplifying the same standards schools are setting for students. More exemplars are needed.

APPENDIX A INTERVIEW PROTOCOLS

Initial Teacher Interview March 7-10, 1993

Pretend you are talking to someone who knows nothing about KTWP. Please explain as much as you can about it and about your involvement in it. You might, for example, begin by talking about why and how you chose to even apply for it. What motivated you?

How do you use your money?

How do you make room for telecommunications in your curriculum?

How has this project changed you? Your feelings? Your teaching decisions?

How has this year been different for you as a teacher?

What difference has it made, really, to students?

Are there times when some classes are better? How do you know?

Are there things no one should do?

What's crucial?

What would you be doing if you weren't doing those things?

What changes would you like to make for next year's project?

Second Teacher Interview

June, 1994

How has this year been different compared to last?

How has your teaching changed?

How has KERA impacted your teaching?

How has your definition of writing been influenced by your work on KTWP?

What value does the network have for you personally and professionally?

What recommendations would you make for teachers interested in telecommunications?

What problems, potential or real, and what issues do you have in terms of telecommunications? What questions?

What changes would you like to make for next year's project?

Third Teacher Interview

July, 1995

Please focus on this past year of KTWP. Talk about the year: what was hard about it, what was easy, what was good about it?

Go ahead and talk about the whole project. Now over the three years, what would you say you've learned as a teacher?

What would you say that your contributions have been to the group and to the project?

Describe your classroom. What does it look like? If I were to walk in any day, what might you be doing? What would the students be doing?

How have you changed? What have you learned or what thoughts do you have about technology, writing, assessment. . .?

Can you make any comments about your theories-- about what you've come to believe in your heart about teaching and learning, writing and technology? What's important, what do you hold as truths about those things?

Final Teacher Interview

December, 1996

Is my description of your participation accurate?

Can you explain your participation -- why it was the way it was?

What factors fostered your use of telecommunications and participation in the project?

What factors constrained your use of telecommunications and participation in the project?

How do you think your students benefitted from your participation in this project?

To what degree do you now use telecommunications in your teaching?

What did you learn through the use of telecommunications -- about teaching; about content; about anything?

In what ways are you different as a result of the project?

What was the nature of your learning?

What factors fostered your learning?

What factors constrained it?

APPENDIX B
TEACHER SURVEY

April 26, 1994

1. How do you feel about the "Journal" (teachers' journal) conference? Is it useful? Do you enjoy reading the notes? Do you enjoy writing for the other teachers to read?
2. In what way(s) do you find "Journal" to be valuable? What frustrations do you have?
3. What inspires you to participate?
4. When you write for this conference, what kinds of decisions do you make in terms of content, organization, word choice, purpose, and so on? I guess what I'm wondering is whether you consciously consider audience and intent when you write and if so, how.
Does this conference have "rules?"
5. What other comments can you make about this particular discussion area, about your own participation, and about the participation of your colleagues?

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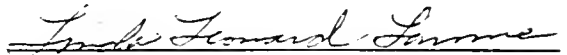
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BIOGRAPHICAL SKETCH

Susan Ruth Nelson Wood, the daughter of Kelvin and Ruth Nelson, was born in Ithaca, New York, on February 5, 1954. After graduating from John F. Kennedy High School in Willingboro, New Jersey, in 1972, she received an A. B. degree in English literature, with an emphasis in journalism, from Eastern Kentucky University in 1976. For several years, she continued her studies at Eastern Kentucky University, teaching English composition as an adjunct, until she completed her elementary education certification and earned a Master of Arts degree in English, with a specialization in American literature. In 1980, she began teaching fourth grade in the mountains of Estill County, Kentucky. Two years later, she moved to the middle school where she built a language arts and writing program, teaching seventh and eighth grade for nine years. During summers she attended the Kentucky National Writing Project; a Foxfire Seminar at Berea College; Bread Loaf School of English at Middlebury College in Vermont; and a National Endowment for the Humanities Seminar at East Central University in Ada, Oklahoma. Before starting her doctoral work at the University of Florida, she worked as a Regional Writing Resource Teacher for the Kentucky Writing Program, supporting the implementation of the Kentucky Educational Reform Act. Since 1996, she had been teaching in the School of Education at Western Oregon State College, Monmouth. Her writing has been published several times.

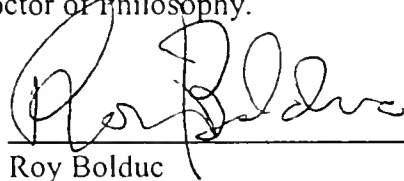
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Linda Leonard Lamme, Chair

Professor of Instruction and Curriculum

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Professor Emeritus of Instruction and Curriculum

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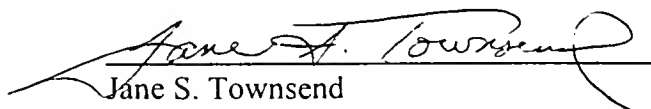
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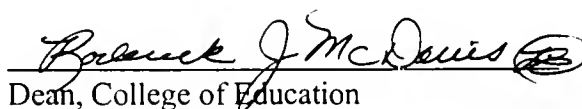


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This dissertation was submitted to the Graduate Faculty of the College of Education and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

May 1997



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